# QUÉBEC'S FOREST RESOURCES AND INDUSTRY

## STATISTICAL INFORMATION
## 1986-1987 EDITION

# ERRATA

Page 16: Spruce budworm

The total indicated for Region 04, in 1986, should read **797 002** instead of 737 002;

and the figures for Region 06, in 1985, under the heading «Severe», should read **372 345** instead of 272 345.

Page 23: Volume of wood harvested in Québec according to socio-economic zones

In the «total %» column for 1984-1985, the figures should read **77%** instead of 85%, for Québec Public Forests, and **23%** instead of 15%, for Private Forests.

Page 30: Reforestation in 1984-1985

In Region 02, the total for «white spruce» should read **867** instead of 6 867.

Page 38: Under the heading «Lumber»

The text should read «**Over 50 000 $m^3$/year**» rather than 50 000 $m^3$/ha.

Page 39: Productivity of the wood industry

Since the data are expressed in dollars, the third decimal should be disregarded.

Page 44: Financial structure ratio

The average indicated for British Columbia should read **56:44** rather than 66:34.

Pages 44 and 50: Working Capital Ratio

No percent sign should appear in these tables.

Page 46: Pulp and paper mills

There are **11 plants** in Region 04 and not 22. Under the heading «Paperboard», the text should read **1 plant** rather than 2 in Region 05.

Page 52: Economic indicator

The value added to activity A, «Logging», was **407 101** in 1984 and not 47 101.

As a result, the «%» of the forest sector/total economic activity should be **4.1%** in 1984 instead of 3.8%.

# QUÉBEC'S FOREST RESOURCES AND INDUSTRY

## STATISTICAL INFORMATION
## 1986-1987 EDITION

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**REMARK:**
Unlesss otherwise indicated, data are provided by the administrative unit of the MER which specializes in the subject being dealt with.

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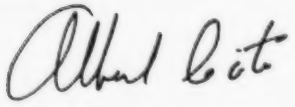
The forests play a major role in the geographical makeup and ecological balance of Québec, as well as in its social and economic development.

Covering the greater part of Québec's territory, the forests have given rise to the province's leading industry in terms of employment, added value and exports. The forest resource also provides the backdrop for a tourist and recreational industry that generates tens of millions of dollars. Finally, the forest tempers our climate, regulates the flow of our rivers and streams, reduces soil erosion and provides an essential habitat for fish and wildlife species.

As we all enjoy the benefits of this renewable natural resource, we must also share the collective responsibility of ensuring its protection, management and use.

After consulting with the industry, the business and academic communities, forestry professionals, and other interest groups, the gouvernement du Québec passed the Forest Act, which introduces a new system of forest management, This system, based on the principles of sustained yield and multiple use of the forest, also takes both economical and ecological requirements into account.

This 1986-1987 statistical document clearly shows the crucial importance of the forest sector for Québec's society. We hop 't will enable readers to fully appreciate the value of this irreplaceable lev in Québec's economy.



Albert Côté, For. Eng.
Minister
Responsible for Forests

# Québec's Forest Resources and Industry

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# 1 Geographical Description of Québec's Forests

## 1.1 Ecological Zones

### Area and Location of Québec's Ecological Zones

According to the border set in 1927, which is not definitive, Québec has an area of 1 667 926 km², Labrador excluded.

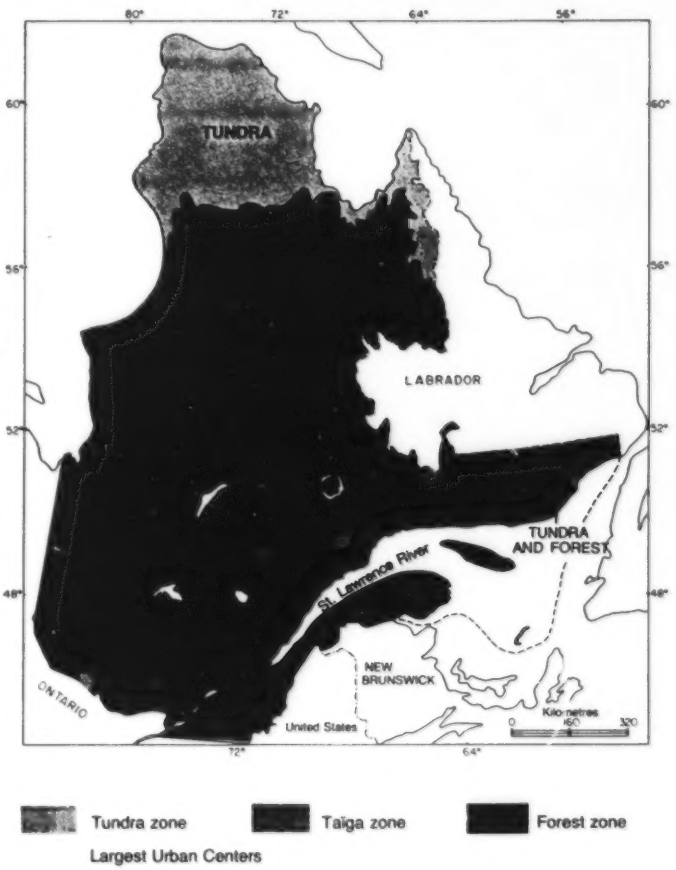
The waters of the St. Lawrence River, the Gulf of St. Lawrence (up to the limit of equidistance from both shores) and the indentations along James Bay, Hudson Bay, Hudson Strait, and Ungava Bay cover 152 693 km², or 9% of Québec's total area.

Québec's land mass is divided into three main ecological zones:

- the TUNDRA, the most northerly zone, is void of trees and consists of swamps and rocky outcrops on which moss, lichens and bushes grow. It has an area of 208 741 km², or 12% of Québec's area;
- the middle zone, called TAÏGA, extends to about the 52nd parallel; it is sparsely wooded and has no commercial potential. It has an area of 527 236 km², or 32% of Québec's total area;
- the most southerly zone, the FOREST, includes all productive forests; it covers the rest of Québec (779 256 km²), or 47% of its area.

The forest inventory established for management purposes is limited to the MER's nine administrative regions. It covers almost the entire Forest zone, including a small strip of Taïga lying between Havre-Saint-Pierre and Blanc-Sablon along the St. Lawrence, and has an area of 764 314 km², or 46% of Québec's area.

### Québec's Ecological Zones



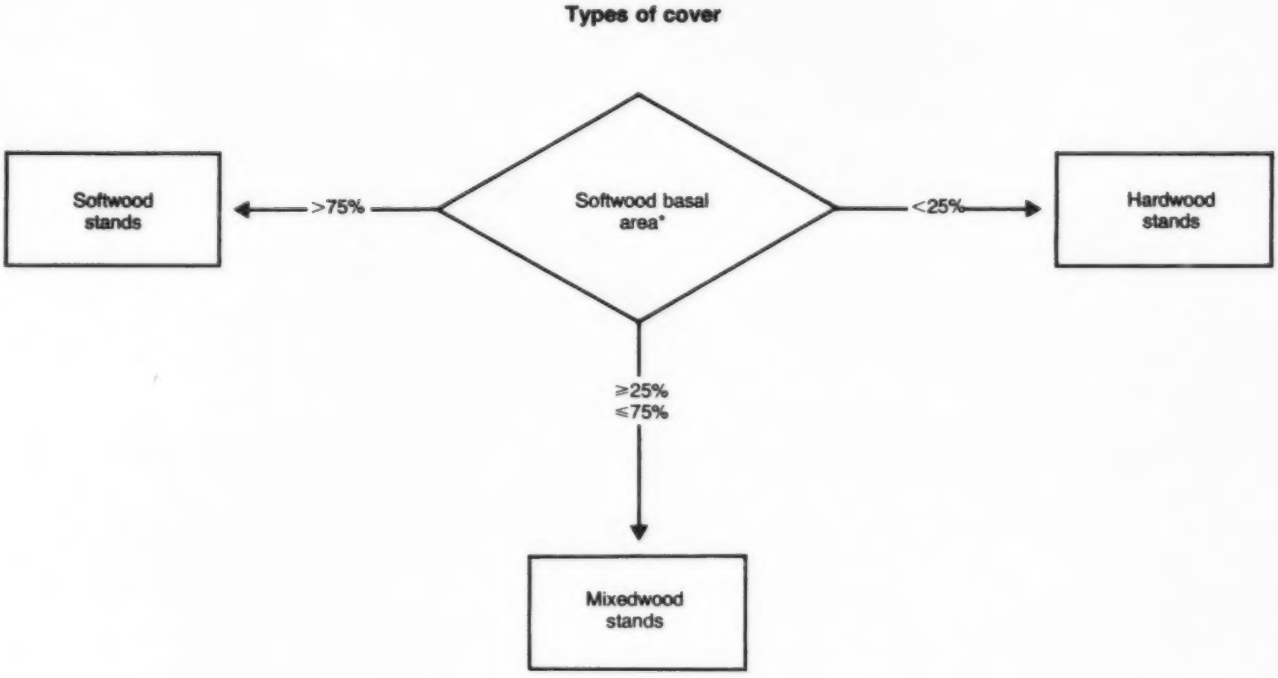

N.B.: The ecological Forest zone and the Commercial forest region, which encompasses all of the MER's administrative regions, are two different entities.

# 1 Geographical Description of Québec's Forests

## 1.2 Ecological Subzones and Climax Communities in the Forest Zone

### Definitions

The ecological Forest zone is subdivided into the hardwood, mixedwood and softwood subzones, according to the nature and **type of cover** as well as the basal area* occupied by softwood and hardwood species. Various **climax communities** are associated with each subzone; they group together the areas which have the same species or groups of species.




#### Climax community

The culminating stage in plant succession for a given environment, the vegetation having reached a highly stable condition, is called a climax community.

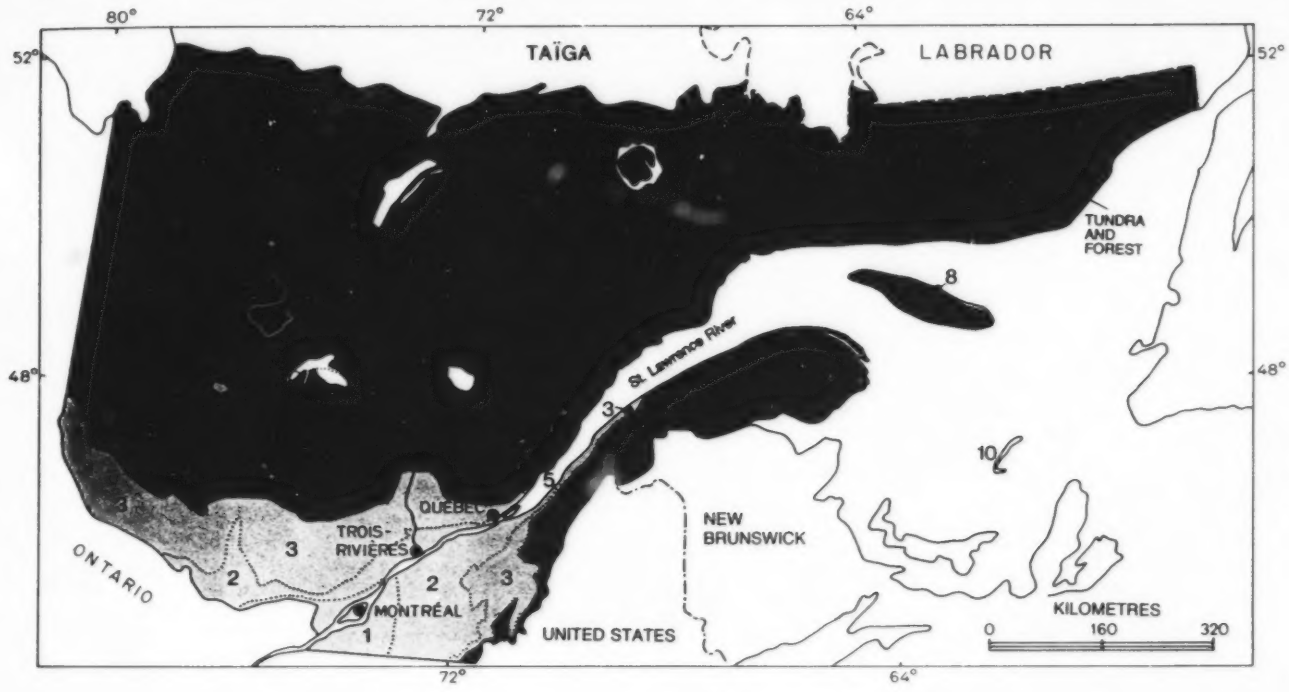
Hardwood forests include three climax communities in which sugar maples are predominant over average sites. Mixedwood forests comprise four of them where balsam fir, yellow birch and sugar maple are the main climax species. In softwood forests, five climax communities are present with black spruce and balsam fir as dominant species.

* Basal area: the area actually occupied by all the stems of a stand (measured on the bark, at 1.30 m above the ground).

# 1 Geographical Description of Québec's Forests

## 1.2 Ecological Subzones and Climax Communities in the Forest Zone (continued)

### Ecological Subzones and Climax Communities in the Forest Zone




### Ecological Subzones

HARDWOOD FOREST

**Corresponding climax communities**

(1) Sugar maple — hickory forest and sugar maple — basswood forest
(2) Sugar maple — basswood forest and sugar maple — yellow birch forest
(3) Sugar maple — yellow birch forest

MIXEDWOOD FOREST

**Corresponding climax communities**

(4) Sugar maple — yellow birch forest and yellow birch — balsam fir forest
(5) Balsam fir — yellow birch forest
(6) Yellow birch — balsam fir forest
(7) Balsam fir, white birch and red maple forest

SOFTWOOD FOREST

**Corresponding climax communities**

(8) Balsam fir — white birch forest
(9) Balsam fir and black or white spruce forest
(10) Balsam fir — white spruce forest
(11) Black spruce and moss forest
(12) Black spruce, balsam fir and moss forest
(13) Tundra

# 1 Geographical Description of Quebec's Forests

## 1.3 Administrative Boundaries of the MER

### Definitions

**Commercial Forest Region**
This term is used to designate the overall territory which the MER has subdivided for management purposes.

**Administrative Regions and Administrative Units**
These are the administrative subdivisions which are determined by the MER and benefit from a regional administration. There are nine administrative regions encompassing 44 administrative units.

**Socioeconomic Zones and Management Units**
Subdivisions of the territory based on socioeconomic characteristics (four zones)*. The superimposition of both types of divisions (administrative and socioeconomic) divides certain administrative units into smaller territories called management units. In other words, an administrative unit which covers two or three socioeconomic zones includes the same number of management units.

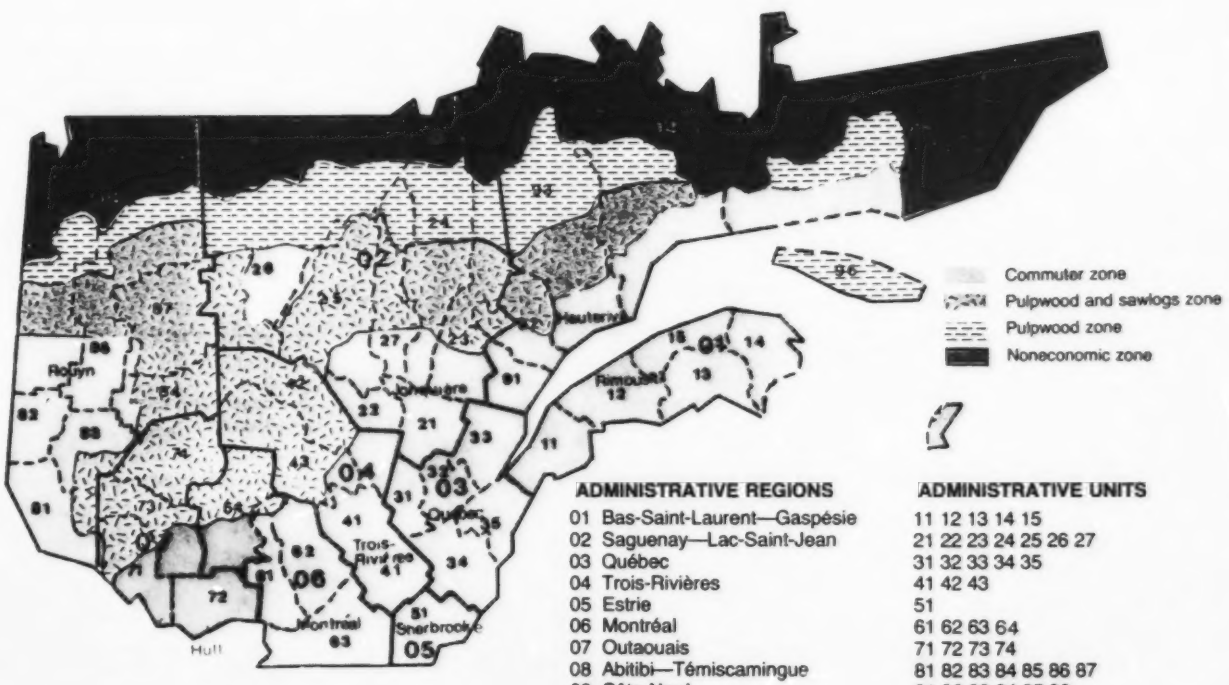
*** Commuter operations zone**
A territory located within a 65-km radius from towns of 5 000 inhabitants or more and which is the preferential source of supply for the forest industry.

*** Pulpwood and sawlogs operations zone**
A territory located more than 65 km away from towns and whose accessible timber may be of interest to sawmills and pulp and paper industries as a secondary source of supply.

*** Pulpwood operations zone**
The part of the commercial forest region which may be of interest to the industry as a tertiary source of supply.

*** Noneconomic zone**
The northern part of the territory which cannot currently be logged economically, but which may have some potential for the future.

### Administrative Boundaries of the ministère de l'Énergie et des Ressources



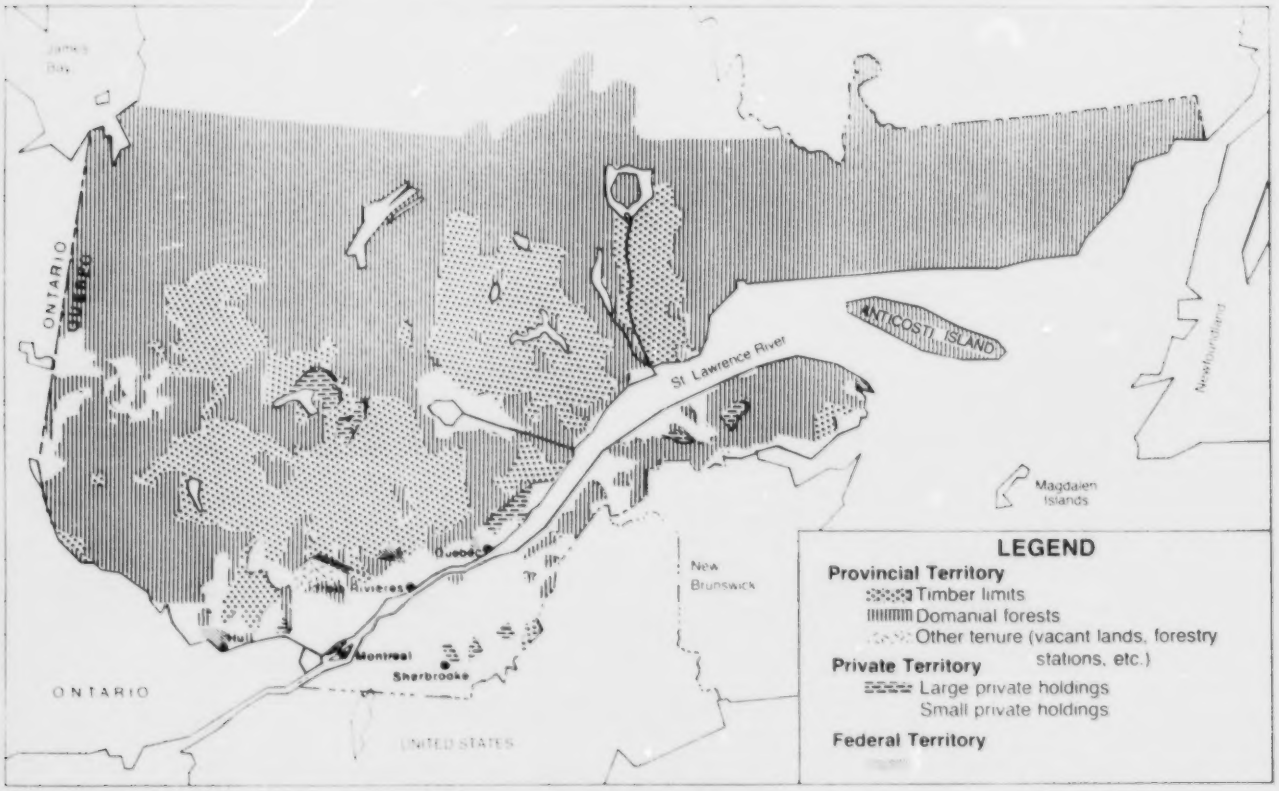

| ADMINISTRATIVE REGIONS | ADMINISTRATIVE UNITS |
|---|---|
| 01 Bas-Saint-Laurent—Gaspésie | 11 12 13 14 15 |
| 02 Saguenay—Lac-Saint-Jean | 21 22 23 24 25 26 27 |
| 03 Québec | 31 32 33 34 35 |
| 04 Trois-Rivières | 41 42 43 |
| 05 Estrie | 51 |
| 06 Montréal | 61 62 63 64 |
| 07 Outaouais | 71 72 73 74 |
| 08 Abitibi—Témiscamingue | 81 82 83 84 85 86 87 |
| 09 Côte-Nord | 91 92 93 94 95 96 |

Note: This map reflects recent changes in the regional administrative boundaries.

# 1

## 1.4 Types of Ownership and Tenure

### Types of Ownership and Tenure in the Commercial Forest Region




### Area by Types of Ownership and Tenure

| | The MER's Administrative Regions | | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | |
| | km² | km² | km² | km² | km² | km² | km² | km² | km² | km² |
| **Provincial Territory** | **27 470** | **159 885** | **12 461** | **36 639** | **598** | **9 387** | **46 510** | **127 431** | **228 637** | **649 018** |
| Timber Limits* | 1 729 | 42 437 | 5 718 | 24 927 | 28 | 4 533 | 24 261 | 19 449 | 25 195 | 148 277 |
| Domanial Forest | 23 819 | 110 442 | 6 058 | 7 176 | 555 | 2 766 | 21 730 | 105 598 | 182 275 | 460 419 |
| Other Tenure (vacant lands, forestry stations, etc.) | 1 922 | 7 006 | 685 | 4 536 | 15 | 2 088 | 519 | 2 384 | 21 167 | 40 322 |
| **Private Territory** | **15 371** | **6 143** | **21 578** | **14 101** | **12 829** | **18 366** | **10 556** | **11 780** | **1 924** | **112 648** |
| Large holdings** | 1 291 | 500 | 2 567 | 4 277 | 990 | 43 | 447 | 506 | 928 | 11 549 |
| Small holdings | 14 080 | 5 643 | 19 011 | 9 824 | 11 839 | 18 323 | 10 109 | 11 274 | 996 | 101 099 |
| **Federal Territory** | **277** | **52** | **243** | **590** | **—** | **214** | **473** | **519** | **280** | **2 648** |
| **Total** | **43 118** | **166 080** | **34 282** | **51 330** | **13 427** | **27 967** | **57 539** | **139 730** | **230 841** | **764 314** |

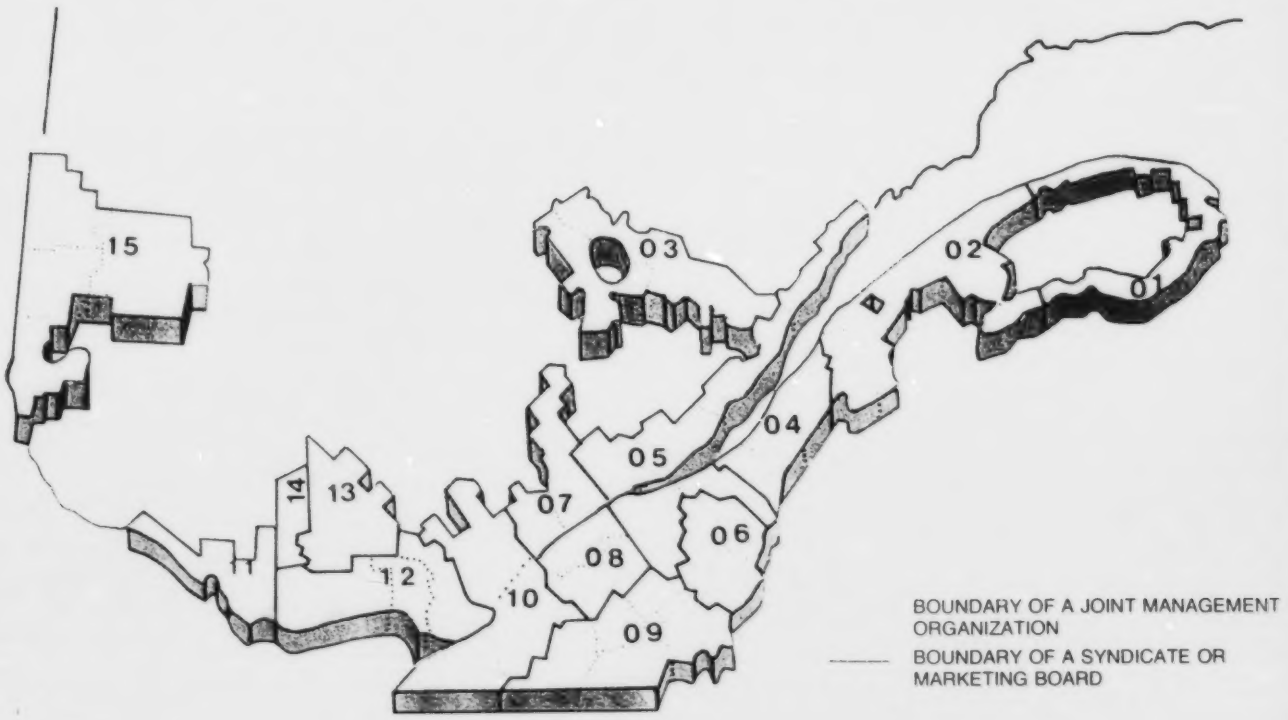
* There are currently 34 timber limits
** More than 800 hectares in a single block

Note: For regions 7 and 8, this table provides data that were revised following the latest ten-year inventory. (Data for the other regions are currently under revision.)

# 1 Geographical Description of Québec's Forests

## 1.5 Administrative Boundaries of Private Forests

### Boundaries of Areas Served by Syndicates, Marketing Boards and Joint Management Organizations




### Syndicates, Marketing Boards and Joint Management Organizations

| | JOINT MANAGEMENT | | |
|---|---|---|---|
| SYNDICATES OR MARKETING BOARDS | Groups or companies (number) | Areas covered by agreements* (hectares) | Owners involved* (number) |
| 01. Syndicat des producteurs de bois de la Gaspésie | 4 | 52 744 | 767 |
| 02. Syndicat des producteurs de bois du Bas-Saint-Laurent | 9 | 174 824 | 2 606 |
| 03. Syndicat des producteurs de bois du Saguenay — Lac-Saint-Jean | 3 | 53 591 | 937 |
| 04. Office des producteurs de bois de Sainte-Anne-de-la-Pocatière | 3 | 18 090 | 353 |
| 05. Office des producteurs de bois de la région de Québec | 5 | 32 156 | 705 |
| 06. Syndicat des producteurs de bois de la Beauce | 3 | 37 510 | 1 051 |
| 07. Syndicat des producteurs de bois de la Mauricie | 2 | 14 848 | 306 |
| 08. Syndicat des producteurs de bois de Nicolet | 2 | 16 907 | 420 |
| 09. Syndicat des producteurs de bois de l'Estrie | 5 | 43 163 | 809 |
| 10. Syndicat des producteurs de bois de Montréal | 1 | 1 164 | 30 |
| 11. Office des producteurs de bois de Pontiac | 1 | 1 450 | 20 |
| 12. Syndicat des producteurs de bois des Laurentides | 1 | 2 562 | 52 |
| 13. Syndicat des producteurs de bois du comté de Labelle | 1 | 12 800 | 260 |
| 14. Office des producteurs de bois de la Gatineau | 1 | 7 645 | 115 |
| 15. Syndicat des producteurs de bois de l'Abitibi — Témiscamingue | 4 | 51 216 | 991 |
| Total | 45 | 520 670 | 9 422 |

Source: Fédération des producteurs de bois du Québec

* Valid as of March 31, 198

# 1 Geographical Description of Québec's Forests

## 1.6 Forest Cooperatives

### Québec Forest Cooperatives
### *A) Distribution*

| | The MER's Administrative Regions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | Prov. | Total |
| Number of cooperatives | 13 | 14 | 8 | 2 | 1 | 4 | 2 | 19 | 7 | 1 | 71 |
| Number of cooperatives in operation | 9 | 11 | 4 | 2 | 1 | 3 | 2 | 14 | 5 | 1 | 52 |
| Number of regional and provincial organizations | | | | | | | | | | | 4 |
| Number of members | | | | | | | | | | | 4 000* |
| Number of workers | | | | | | | | | | | 3 000* |
| Duration of operations | | | | | | | | | | | month/year 7.5 to 8 |
| Total sales | | | | | | | | | | | 120* $ millions |

* Approximation

### *B) Sectors of Activity*

Québec forest cooperatives are involved in:
1 – Logging
2 – Forest management
3 – Seedling production
4 – Processing

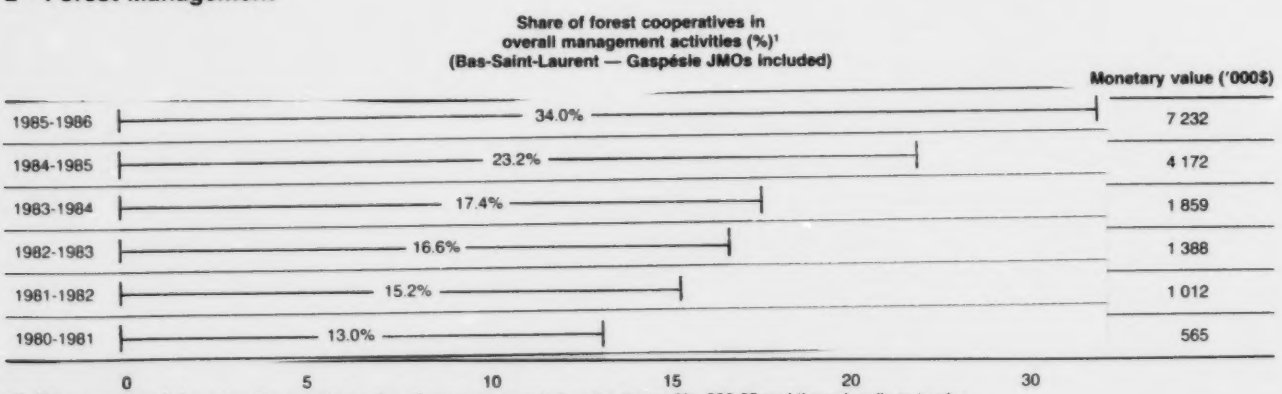
### *C) Assessment of Achievements*

#### 1 – Logging

Estimate of the volumes logged by the cooperatives between 1970 and 1985.

| | 1970 | 1975 | 1980 | 1985 |
|---|---|---|---|---|
| Harvest (solid m³) | 1 071 326 | 1 427 933 | 1 572 430 | 2 501 091 |

#### 2 – Forest Management




(1) This percentage is based on the monetary value of contracts awarded under decree No. 580-85 and through calls to tender.

#### 3 – Seedling Production

In 1985-1986, eight cooperatives were awarded MER contracts for the annual production of 36 million hothouse and tunnel-grown seedlings.

#### 4 – Processing

Only 11 cooperatives are full or part owners of wood fiber processing mills. With eight mills between them, these cooperatives process approximately 229 million bfm, for total sales in the region of $70 million.

# 2 Inventory of Commercial Forests

## 2.1 Area

### Area *(km²)*
### A) By Socioeconomic Zone

| | ZONES | | | | | | | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Commuter | | Pulpwood-Sawlogs | | Pulpwood | | Noneconomic | | | |
| | km² | % | km² | % | km² | % | km² | % | km² | % |
| **Total Area** | **292 261** | **100** | **197 224** | **100** | **92 629** | **100** | **182 200** | **100** | **764 314** | **100** |
| Water | 19 561 | 7 | 21 091 | 11 | 13 394 | 14 | 19 682 | 11 | 73 728 | 10 |
| Non-forest lands | 37 122 | 13 | 198 | — | 27 | — | 180 | — | 37 527 | 5 |
| Unproductive forest lands | 19 734 | 7 | 19 639 | 10 | 12 470 | 13 | 45 231 | 25 | 97 074 | 13 |
| Inaccessible productive forest lands[1] | 4 574 | 2 | 1 315 | 1 | 721 | 1 | 438 | — | 7 048 | 1 |
| *Accessible productive forest lands[2]* | *211 270* | *72* | *154 981* | *79* | *66 017* | *71* | *116 669* | *64* | *548 937* | *72* |
| Mature[3] | 78 434 | 37 | 88 575 | 57 | 45 240 | 69 | 78 985 | 68 | 291 234 | 53 |
| Immature | 83 978 | 40 | 38 341 | 25 | 8 507 | 13 | 6 931 | 6 | 137 757 | 25 |
| Regenerated | 31 402 | 15 | 17 800 | 11 | 7 268 | 11 | 10 907 | 9 | 67 377 | 12 |
| Regenerating | 17 456 | 8 | 10 265 | 7 | 5 002 | 8 | 19 846 | 17 | 52 569 | 10 |
| **Federal Public Lands** | **1 992** | **1** | **156** | **—** | **—** | **—** | **500** | **—** | **2 648** | **—** |
| Water | 158 | 8 | 17 | 11 | — | — | 9 | 2 | 184 | 7 |
| Non-forest lands | 118 | 6 | 1 | 1 | — | — | — | — | 119 | 4 |
| Unproductive forest lands | 94 | 5 | 2 | 1 | — | — | 190 | 38 | 286 | 11 |
| Inaccessible productive forest lands[1] | 38 | 2 | — | — | — | — | — | — | 38 | 1 |
| *Accessible productive forest lands[2]* | *1 584* | *80* | *136* | *87* | — | — | *301* | *60* | *2 021* | *76* |
| Mature[3] | 644 | 41 | 37 | 27 | — | — | 229 | 76 | 910 | 45 |
| Immature | 724 | 46 | 85 | 63 | — | — | — | — | 809 | 40 |
| Regenerated | 149 | 9 | 5 | 4 | — | — | — | — | 154 | 8 |
| Regenerating | 67 | 4 | 9 | 7 | — | — | 72 | 24 | 148 | 7 |
| **Québec Public Lands[4]** | **187 309** | **64** | **191 891** | **97** | **92 629** | **100** | **177 189** | **97** | **649 018** | **85** |
| Water | 14 549 | 8 | 20 528 | 11 | 13 394 | 14 | 19 479 | 11 | 67 950 | 10 |
| Non-forest lands | 741 | — | 179 | — | 27 | — | 176 | — | 1 123 | — |
| Unproductive forest lands | 16 477 | 9 | 19 327 | 10 | 12 470 | 13 | 43 206 | 24 | 91 480 | 14 |
| Inaccessible productive forest lands[1] | 3 303 | 2 | 1 276 | 1 | 721 | 1 | 438 | — | 5 738 | 1 |
| *Accessible productive forest lands[2]* | *152 239* | *81* | *150 581* | *78* | *66 017* | *71* | *113 890* | *64* | *482 727* | *74* |
| Mature[3] | 69 203 | 45 | 86 852 | 57 | 45 240 | 69 | 76 867 | 67 | 278 162 | 58 |
| Immature | 49 331 | 32 | 37 205 | 24 | 8 507 | 13 | 6 929 | 6 | 101 972 | 21 |
| Regenerated | 21 504 | 14 | 16 653 | 11 | 7 268 | 11 | 10 907 | 10 | 56 332 | 12 |
| Regenerating | 12 201 | 8 | 9 871 | 6 | 5 002 | 8 | 19 187 | 17 | 46 261 | 10 |
| **Private Lands** | **102 960** | **35** | **5 177** | **3** | **—** | **—** | **4 511** | **2** | **112 648** | **15** |
| Water | 4 854 | 5 | 546 | 11 | — | — | 194 | 4 | 5 594 | 5 |
| Non-forest lands | 36 263 | 35 | 18 | — | — | — | 4 | — | 36 285 | 32 |
| Unproductive forest lands | 3 163 | 3 | 310 | 6 | — | — | 1 835 | 41 | 5 308 | 5 |
| Inaccessible productive forest lands[1] | 1 233 | 1 | 39 | 1 | — | — | — | — | 1 272 | 1 |
| *Accessible productive forest lands[2]* | *57 447* | *56* | *4 264* | *82* | — | — | *2 478* | *55* | *64 189* | *57* |
| Mature[3] | 8 587 | 15 | 1 686 | 40 | — | — | 1 889 | 76 | 12 162 | 19 |
| Immature | 33 923 | 59 | 1 051 | 25 | — | — | 2 | — | 34 976 | 54 |
| Regenerated | 9 749 | 17 | 1 142 | 27 | — | — | — | — | 10 891 | 17 |
| Regenerating | 5 188 | 9 | 385 | 9 | — | — | 587 | 24 | 6 160 | 10 |

(1) Inaccessible productive forest lands: lands with a slope superior to 50%.

(2) Accessible productive forest lands: lands with a slope inferior to 50%

(3) Stages of development of stands (mature, immature, regenerated or regenerating). These stages correspond to periods in the growth cycle of a forest stand. The end of these periods has been established according to the net growth rate of the stand. A stand may include stems large enough for logging and be identified as immature if it is still increasing. On the other hand, another stand composed of smaller stems than the previous one might be considered ready for logging if its net growth rate is declining. Consequently, development stages do not correspond to fixed periods of time for all stands, they are related to the net growth rate which depends on the group of species, the quality of the station, climatic conditions and drainage.

(4) These figures do not entirely take into account transfers in ownership ratified by the James Bay and Northern Québec Agreement. Thus, they are slightly over-valued in the pulpwood and noneconomic zones, to the detriment of federal and private lands.

# 2 Inventory of Commercial Forests

## 2.1 Area (continued)

### B) By the MER's Administrative Regions

| | TOTAL AREA | | | | ACCESSIBLE PRODUCTIVE FOREST LANDS | | | |
|---|---|---|---|---|---|---|---|---|
| | Federal km² | Quebec km² | Private km² | Total km² | Federal km² | Quebec km² | Private km² | Total km² |
| 01 Bas-Saint-Laurent—Gaspesie | 277 | 27 470 | 15 371 | 43 118 | 252 | 24 873 | 10 548 | 35 673 |
| 02 Saguenay—Lac-Saint-Jean | 52 | 159 885 | 6 143 | 166 080 | 31 | 125 343 | 3 333 | 128 707 |
| 03 Québec | 243 | 12 461 | 21 578 | 34 282 | 202 | 11 029 | 12 984 | 24 215 |
| 04 Trois-Rivières | 590 | 36 639 | 14 101 | 51 330 | 509 | 30 328 | 7 810 | 38 647 |
| 05 Estrie | — | 598 | 12 829 | 13 427 | -- | 566 | 7 482 | 8 048 |
| 06 Montréal | 214 | 9 387 | 18 366 | 27 967 | 85 | 8 172 | 6 927 | 15 184 |
| 07 Outaouais | 473 | 46 519 | 10 556 | 57 539 | 387 | 38 862 | 7 287 | 46 536 |
| 08 Abitibi-Témiscamingue | 519 | 127 431 | 11 780 | 139 730 | 315 | 87 115 | 6 483 | 93 913 |
| 09 Côte-Nord | 280 | 228 637 | 1 924 | 230 841 | 240 | 156 439 | 1 335 | 158 014 |
| **Total** | **2 648** | **649 018** | **112 648** | **764 314** | **2 021** | **482 727** | **64 189** | **548 937** |

### C) By Tenure *(Québec Public Lands)*

| | Total Area | | Accessible productive forest lands | | Accessible productive forest lands total area |
|---|---|---|---|---|---|
| | km² | % | km² | % | |
| Timber limits | 148 277 | 22.8 | 121 550 | 25.2 | 82.0 |
| Domanial forests | 460 419 | 70.9 | 332 664 | 68.9 | 72.3 |
| Other tenures | 40 322 | 6.2 | 28 513 | 5.9 | 70.7 |
| **Total** | **649 018** | **100.0** | **482 727** | **100.0** | **74.4** |

Note: For regions 7 and 8, the above tables provide data that were revised following the latest ten-year inventory.

# 2 Inventory of Commercial Forests

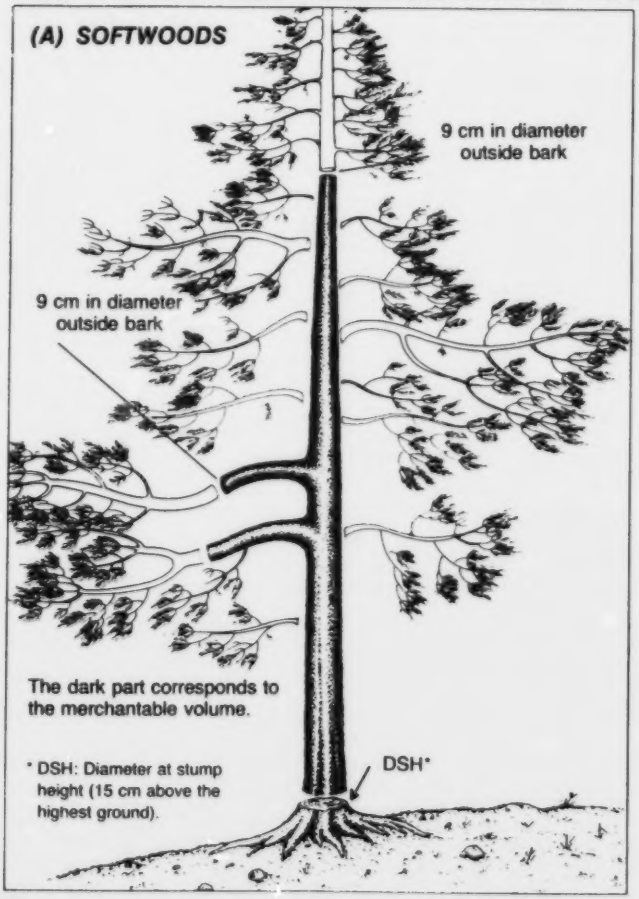
## 2.2 Gross Merchantable Volume

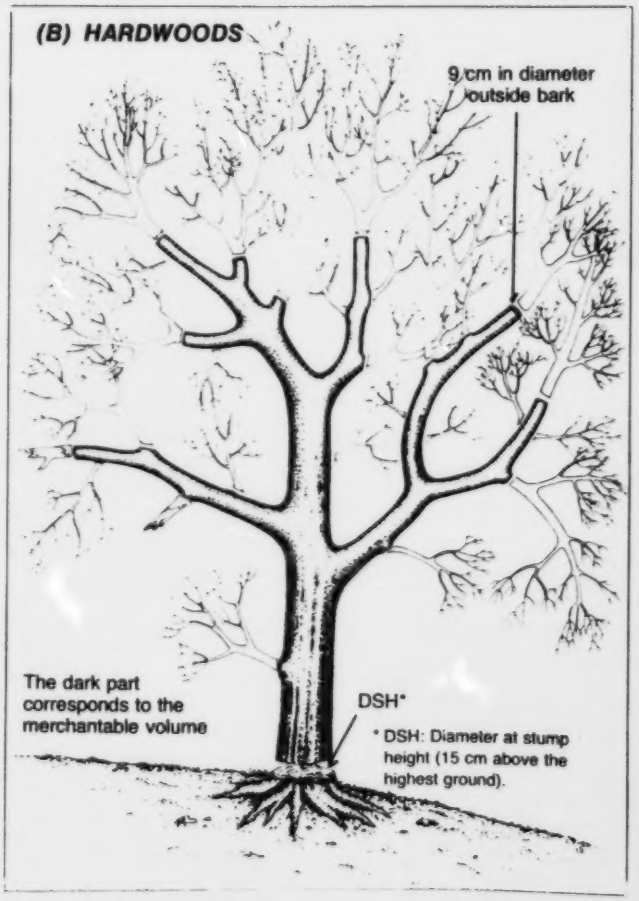
### *Gross Merchantable Volume* of Accessible Productive Zone*

### A) By Socioeconomic Zone

| | ZONES | | | | | | | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Commuter | | Pulpwood-Sawlogs | | Pulpwood | | Noneconomic | | | |
| | '000m³ | % | '000m³ | % | '000m³ | % | '000m³ | % | '000m³ | % |
| **All Forests** | **1 870 546** | **45** | **1 335 676** | **32** | **503 251** | **12** | **459 845** | **11** | **4 169 318** | **100** |
| Mature | 1 004 932 | 54 | 1 009 199 | 76 | 439 631 | 87 | 418 526 | 91 | 2 872 288 | 69 |
| Immature | 785 013 | 42 | 282 284 | 21 | 49 201 | 10 | 29 255 | 6 | 1 145 753 | 27 |
| Regenerated | 80 601 | 4 | 44 193 | 3 | 14 419 | 3 | 12 064 | 3 | 151 277 | 4 |
| **Québec Public Forests** | **1 421 610** | **76** | **1 303 918** | **98** | **503 251** | **100** | **454 311** | **99** | **3 683 090** | **88** |
| Mature | 880 104 | 62 | 988 626 | 76 | 439 631 | 87 | 413 001 | 91 | 2 721 362 | 74 |
| Immature | 480 213 | 34 | 274 361 | 21 | 49 201 | 10 | 29 246 | 6 | 833 021 | 23 |
| Regenerated | 61 293 | 4 | 40 931 | 3 | 14 419 | 3 | 12 064 | 3 | 128 707 | 3 |
| **Private Forests** | **432 669** | **23** | **31 758** | **2** | **—** | **—** | **5 010** | **1** | **469 437** | **11** |
| Mature | 115 991 | 27 | 20 573 | 65 | — | — | 5 001 | 100 | 141 565 | 30 |
| Immature | 297 843 | 69 | 7 923 | 25 | — | — | 9 | — | 305 775 | 65 |
| Regenerated | 18 835 | 4 | 3 262 | 10 | — | — | — | — | 22 097 | 5 |
| **Federal Public Forests** | **16 267** | **1** | **—** | **—** | **—** | **—** | **524** | **—** | **16 791** | **—** |
| Mature | 8 837 | 54 | — | — | — | — | 524 | 100 | 9 361 | 56 |
| Immature | 6 957 | 43 | — | — | — | — | — | — | 6 957 | 41 |
| Regenerated | 473 | 3 | — | — | — | — | — | — | 473 | 3 |

**Gross Merchantable Volume** ***(volume of wood in the stem and branches 9 cm and more in diameter at the small end)***


(A) SOFTWOODS
9 cm in diameter outside bark
9 cm in diameter outside bark
The dark part corresponds to the merchantable volume.
* DSH: Diameter at stump height (15 cm above the highest ground).
DSH*

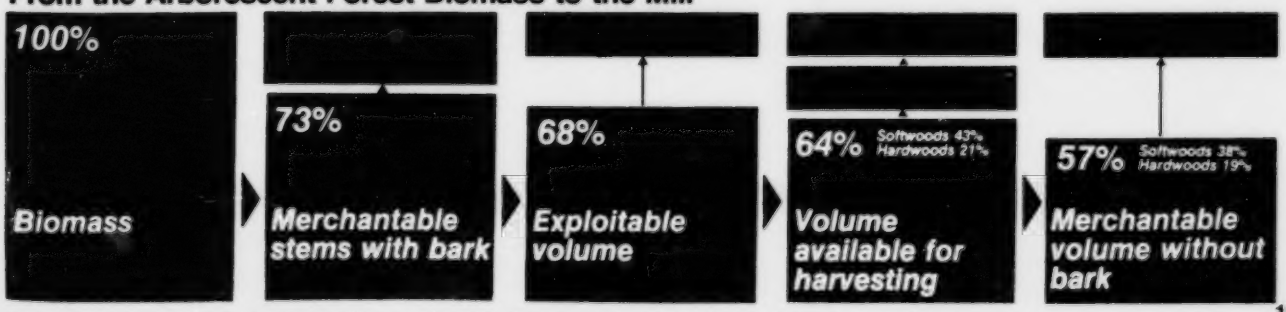

(B) HARDWOODS
9 cm in diameter outside bark
The dark part corresponds to the merchantable volume
DSH*
* DSH: Diameter at stump height (15 cm above the highest ground).

## 2.2 Gross Merchantable Volume (continued)

### B) By the MER's Administrative Regions and by Species

| ADMINISTRATIVE REGIONS OF THE MER AND OWNERSHIP | SOFTWOODS | | | | | HARDWOODS | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Balsam fir | Spruce | Jack pine | Others | Sub-total | White birch | Yellow birch | Poplars | Maples | Others | Sub-total | |
| | % | % | % | % | % | % | % | % | % | % | % | '000m³ |
| **01—Bas-Saint-Laurent—Gaspésie** | **54.5** | **20.3** | **0.1** | **5.6** | **80.5** | **4.9** | **2.5** | **7.1** | **4.5** | **0.6** | **19.5** | **309 242** |
| Federal Public Forests | 46.3 | 20.1 | — | 5.9 | 72.3 | 9.2 | 1.6 | 10.9 | 5.7 | 0.2 | 27.7 | 1 832 |
| Québec Public Forests | 58.3 | 21.8 | 0.1 | 4.7 | 84.9 | 4.5 | 2.3 | 4.5 | 3.3 | 0.5 | 15.1 | 237 029 |
| Private Forests | 42.0 | 15.4 | — | 8.5 | 65.9 | 6.2 | 3.0 | 15.6 | 8.3 | 1.0 | 34.1 | 70 381 |
| **02—Saguenay—Lac-Saint-Jean** | **15.8** | **62.7** | **6.6** | **0.3** | **85.4** | **9.1** | **0.3** | **5.1** | **—** | **—** | **14.6** | **880 584** |
| Federal Public Forests | 10.8 | 68.2 | 2.4 | 0.3 | 81.7 | 10.5 | 0.3 | 7.5 | — | — | 18.3 | 295 |
| Québec Public Forests | 15.7 | 63.5 | 6.6 | 0.2 | 86.0 | 9.1 | 0.3 | 4.6 | — | — | 14.0 | 864 538 |
| Private Forests | 20.9 | 18.6 | 6.7 | 3.6 | 49.8 | 11.6 | 1.6 | 34.1 | 2.2 | 0.7 | 50.2 | 15 751 |
| **03—Québec** | **36.9** | **19.6** | **0.3** | **3.7** | **60.5** | **9.0** | **7.6** | **4.8** | **15.5** | **2.6** | **39.5** | **192 862** |
| Federal Public Forests | 20.3 | 6.4 | — | 1.4 | 28.1 | 3.3 | 20.5 | 2.3 | 29.0 | 16.8 | 71.9 | 1 812 |
| Québec Public Forests | 44.5 | 28.4 | 0.3 | 1.6 | 74.8 | 10.9 | 7.1 | 3.7 | 2.9 | 0.6 | 25.2 | 94 456 |
| Private Forests | 29.8 | 11.2 | 0.4 | 5.7 | 47.1 | 7.3 | 7.9 | 5.9 | 27.5 | 4.3 | 52.9 | 96 594 |
| **04—Trois-Rivières** | **16.0** | **29.9** | **11.4** | **3.1** | **60.4** | **14.4** | **5.9** | **10.4** | **7.0** | **1.9** | **39.6** | **320 288** |
| Federal Public Forests | 16.5 | 17.7 | 1.3 | 9.5 | 45.0 | 8.5 | 16.7 | 5.9 | 18.4 | 5.5 | 55.0 | 6 089 |
| Québec Public Forests | 15.6 | 31.9 | 13.3 | 2.4 | 63.2 | 15.8 | 5.5 | 11.1 | 3.7 | 0.7 | 36.8 | 260 340 |
| Private Forests | 18.1 | 21.4 | 3.6 | 5.8 | 48.9 | 8.3 | 6.6 | 7.5 | 21.4 | 7.3 | 51.1 | 53 859 |
| **05—Estrie** | **13.6** | **7.1** | **—** | **10.5** | **31.2** | **2.9** | **8.4** | **5.9** | **41.7** | **9.9** | **68.8** | **62 232** |
| Federal Public Forests | — | — | — | — | — | — | — | — | — | — | — | — |
| Québec Public Forests | 25.5 | 10.5 | — | 5.0 | 41.0 | 6.8 | 16.1 | 7.0 | 25.9 | 3.2 | 59.0 | 6 902 |
| Private Forests | 12.1 | 6.7 | — | 11.2 | 30.0 | 2.4 | 7.4 | 5.8 | 43.7 | 10.7 | 70.0 | 55 330 |
| **06—Montréal** | **16.3** | **10.9** | **1.3** | **9.7** | **38.1** | **8.6** | **10.9** | **9.2** | **26.1** | **7.0** | **61.9** | **149 337** |
| Federal Public Forests | 12.8 | 5.3 | — | 14.3 | 32.4 | 4.0 | 7.1 | 5.6 | 39.0 | 11.9 | 67.6 | 959 |
| Québec Public Forests | 20.7 | 15.7 | 2.1 | 6.3 | 44.8 | 10.7 | 14.8 | 9.6 | 17.4 | 2.7 | 55.2 | 87 803 |
| Private Forests | 9.9 | 4.1 | 0.1 | 14.5 | 28.6 | 5.6 | 5.3 | 8.7 | 38.6 | 13.2 | 71.4 | 60 575 |
| **07—Outaouais** | **5.4** | **12.2** | **1.8** | **14.4** | **33.7** | **13.1** | **11.9** | **10.5** | **22.0** | **8.7** | **65.3** | **513 725** |
| Federal Public Forests | 7.1 | 4.5 | 0.7 | 13.7 | 26.0 | 3.6 | 3.5 | 10.8 | 26.7 | 29.3 | 74.0 | 3 842 |
| Québec Public Forests | 4.9 | 13.8 | 2.0 | 14.2 | 34.9 | 14.8 | 13.3 | 9.3 | 20.9 | 6.9 | 65.1 | 427 169 |
| Private Forests | 7.9 | 4.5 | 0.6 | 15.3 | 28.3 | 5.1 | 5.2 | 17.0 | 27.1 | 17.3 | 71.7 | 82 714 |
| **08—Abitibi-Témiscamingue** | **6.1** | **49.4** | **10.3** | **5.5** | **71.3** | **9.3** | **3.3** | **12.5** | **3.0** | **0.6** | **28.7** | **708 556** |
| Federal Public Forests | 1.0 | 86.7 | 2.2 | 0.7 | 90.6 | 3.0 | — | 5.9 | 0.5 | — | 9.4 | 406 |
| Québec Public Forests | 6.0 | 50.2 | 10.5 | 5.6 | 72.3 | 9.3 | 3.4 | 11.3 | 3.1 | 0.6 | 277 | 682 434 |
| Private Forests | 7.0 | 29.4 | 4.9 | 2.3 | 43.6 | 10.3 | 0.2 | 45.5 | 0.4 | 0.1 | 56.4 | 25 716 |
| **09—Côte-Nord** | **30.4** | **61.1** | **0.7** | **0.4** | **92.7** | **5.3** | **—** | **2.0** | **—** | **—** | **7.3** | **1 032 491** |
| Federal Public Forests | 50.0 | 32.8 | 2.0 | 2.1 | 86.9 | 5.8 | 0.5 | 6.3 | 0.4 | 0.1 | 13.1 | 1 556 |
| Québec Public Forests | 30.4 | 61.3 | 0.7 | 0.4 | 92.8 | 5.3 | — | 1.9 | — | — | 7.2 | 1 022 418 |
| Private Forests | 31.7 | 41.5 | 4.5 | 1.4 | 79.1 | 8.8 | 0.1 | 11.4 | 0.6 | — | 20.9 | 8 517 |
| **Total: Commercial Forests** | **20.3** | **43.5** | **4.5** | **4.2** | **72.5** | **8.7** | **3.6** | **7.0** | **6.4** | **1.9** | **27.5** | **4 169 318** |
| Federal Public Forests | 20.4 | 17.0 | 0.9 | 8.4 | 46.7 | 6.3 | 9.7 | 7.2 | 18.8 | 11.2 | 53.3 | 16 791 |
| Québec Public Forests | 20.3 | 47.6 | 4.9 | 3.5 | 76.4 | 9.0 | 3.3 | 6.2 | 4.0 | 1.1 | 23.6 | 3 683 090 |
| Private Forests | 20.3 | 12.2 | 1.2 | 9.3 | 42.9 | 6.4 | 5.4 | 13.1 | 24.4 | 7.9 | 57.1 | 469 437 |

### From the Arborescent Forest Biomass to the Mill



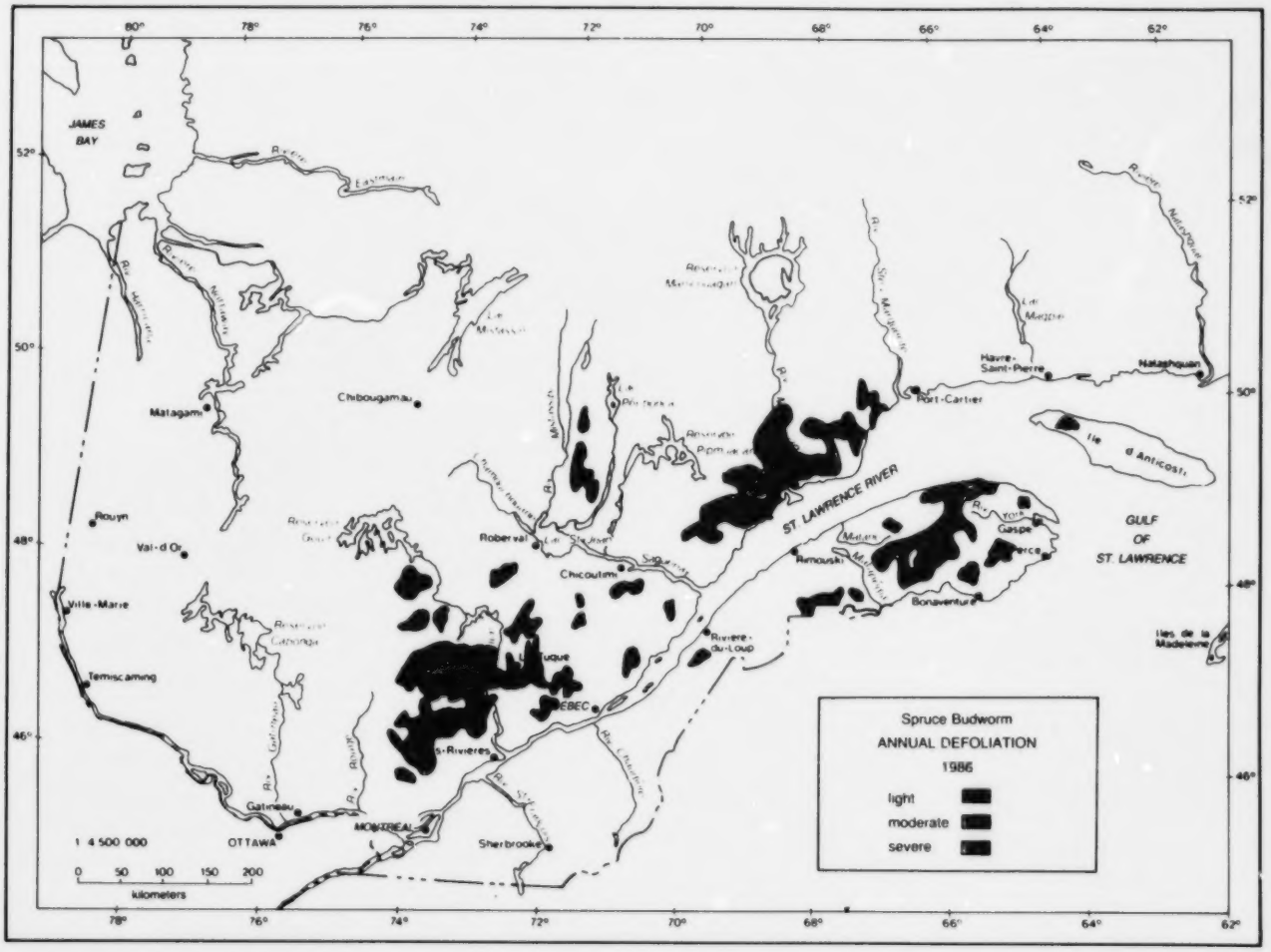

Note: For regions 7 and 8, the above tables provide data that were revised following the latest ten-year inventory.

# 3 Forest Protection

## 3.1 Spruce Budworm

### Degree of Infestation

***Measured in Terms of Defoliation***




### Areas Affected*

| | CLASSES OF DEFOLIATION[1] (hectares) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1985 | | | | 1986 | | | |
| | Light | Moderate | Severe | Total | Light | Moderate | Severe | Total |
| 01 Bas-Saint-Laurent—Gaspésie | 953 128 | 325 740 | 275 552 | 1 554 420 | 315 314 | 322 032 | 56 094 | 633 440 |
| 02 Saguenay—Lac-Saint-Jean | 727 451 | 70 503 | 1 196 307 | 1 994 261 | 26 662 | 32 656 | 13 282 | 72 600 |
| 03 Québec | 958 596 | 121 209 | 575 132 | 1 654 937 | 36 721 | 100 782 | 41 095 | 178 598 |
| 04 Trois-Rivières | 58 907 | 186 876 | 2 031 564 | 2 277 347 | 274 208 | 440 980 | 81 814 | 737 002 |
| 05 Estrie | 2 813 | — | — | 2 813 | — | — | — | — |
| 06 Montréal | 16 875 | 13 594 | 272 345 | 402 814 | 43 281 | 255 626 | 35 313 | 334 220 |
| 07 Outaouais | 100 626 | 37 344 | 51 250 | 189 220 | — | — | — | — |
| 08 Abitibi—Témiscamingue | 1 407 | 21 251 | 10 313 | 32 971 | — | — | — | — |
| 09 Côte-Nord | 149 036 | 37 732 | 964 265 | 1 151 033 | 55 558 | 199 694 | 500 835 | 756 087 |
| **Total (Commercial Forests)** | **2 968 839** | **814 249** | **5 476 728** | **9 259 816** | **751 744** | **1 351 770** | **728 433** | **2 831 947** |

(1) Defoliation means the lost foliage noted on annual growth: light (1% - 35%); moderate (35% - 70%); severe (70% - 100%).

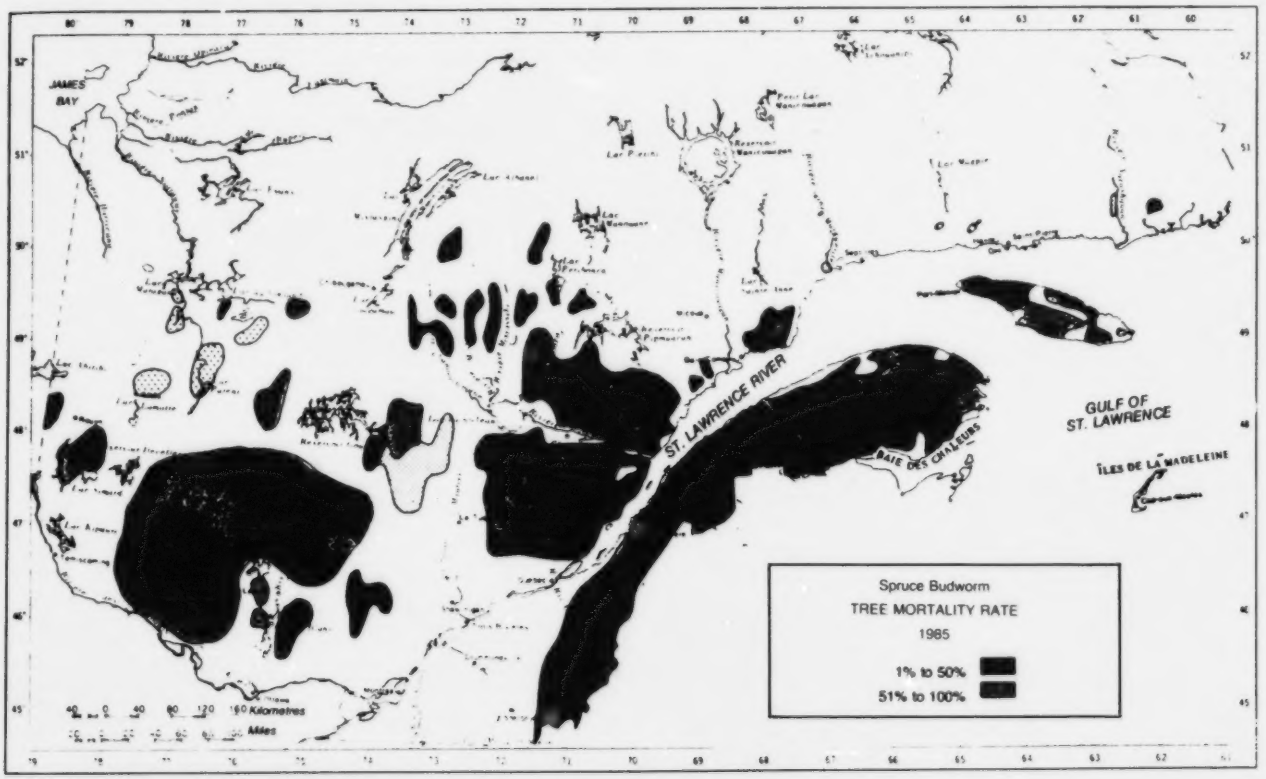
* Areas affected by the spruce budworm, *Choristoneura fumiferana (Clem.)*, in 1985 and 1986.

# 3 Forest Protection

## 3.1 Spruce Budworm (continued)

### Degree of Infestation

***Measured in Terms of Mortality***




### Areas Affected*

| | CLASSES OF MORTALITY[1] (hectares) | | | | |
|---|---|---|---|---|---|
| | 1 – 25% | 26 – 50% | 51 – 75% | 76 – 100% | Total |
| 01 Bas-Saint-Laurent—Gaspésie | 1 482 357 | 364 126 | 99 218 | 707 | 1 946 408 |
| 02 Saguenay—Lac-Saint-Jean | 1 256 274 | 484 495 | 96 189 | 2 500 | 1 839 458 |
| 03 Québec | 945 492 | 425 467 | 75 479 | — | 1 446 438 |
| 04 Trois-Rivières | 463 595 | 205 469 | 160 313 | 27 970 | 857 347 |
| 05 Estrie | 53 875 | 19 649 | 156 | — | 73 680 |
| 06 Montréal | 207 302 | 11 582 | 469 | — | 219 353 |
| 07 Outaouais | 473 594 | 259 844 | 85 063 | 2 897 816 | 3 716 317 |
| 08 Abitibi—Témiscamingue | 182 346 | 238 599 | 333 751 | 881 877 | 1 636 573 |
| 09 Côte-Nord | 776 786 | 236 796 | 60 664 | 53 194 | 1 127 440 |
| **Total (Commercial Forests)** | **5 841 621** | **2 246 027** | **911 302** | **3 864 064** | **12 863 014** |

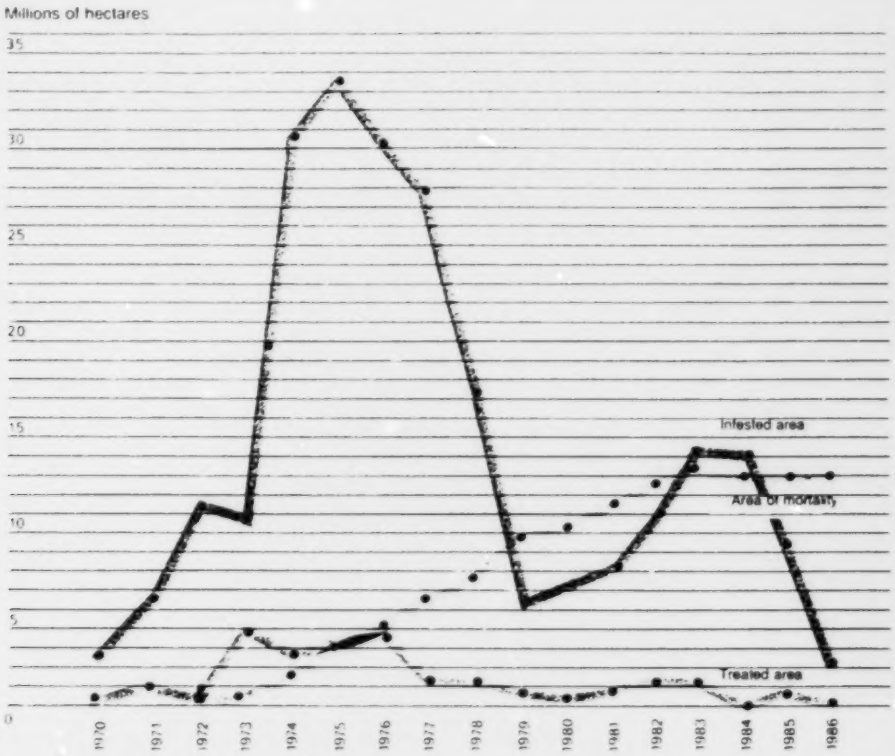
(1) Mortality rates indicate the percentage of dead trees per stand (classifications of 25%).

* Areas affected by the spruce budworm, *Choristoneura fumiferana (Clem.)*, in 1985.

# 3 Forest Protection

## 3.1 Spruce Budworm (continued)

### Evolution of the Spruce Budworm Infestation




### Areas Treated Against the Spruce Budworm

| | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 |
|---|---|---|---|---|---|---|
| **Areas treated (1 000 hectares)** | | | | | | |
| Chemical treatment | 690 | 1 267 | 1 208 | 384 | 184 | 33 |
| Biological treatment | 15 | 32 | 46 | 324 | 482 | 18 |
| Total area treated | 705 | 1 299 | 1 254 | 708 | 667 | 51 |
| **Cost of the program *(in current dollars)*** | **6 970 000** | **10 982 000** | **14 497 000** | **16 753 900** | **19 777 700** | **1 649 700** |
| Average cost/ha chemically treated | 9.43 | 8.15 | 10.98 | 18.88 | 22.69 | — |
| Average cost/ha biologically treated | 31.13 | 20.52 | 26.85 | 29.30 | 32.22 | — |
| Average weighted cost/ha | 9.88 | 8.46 | 11.56 | 23.65 | 29.63 | 32.25 |

### Logging on Public Forest Lands Affected by the Spruce Budworm and Cost of Incentives *(Reduction in Stumpage Dues)* for the Government

| | PULPWOOD | | | | SAWLOGS AND OTHERS | | | |
|---|---|---|---|---|---|---|---|---|
| | 1984-1985 | | 1985-1986 | | 1984-1985 | | 1985-1986 | |
| | Volume ($m^3$) | Reduction ($) | Volume ($m^3$) | Reduction ($) | Volume ($m^3$) | Reduction ($) | Volume ($m^3$) | Reduction ($) |
| 01 Bas-Saint-Laurent — Gaspésie | 563 538 | 620 101 | 477 410 | 392 623 | 1 358 047 | 1 589 043 | 1 641 180 | 1 772 650 |
| 02 Saguenay — Lac-Saint-Jean | 404 233 | 385 746 | 356 198 | 418 216 | 574 737 | 336 017 | 629 838 | 466 098 |
| 03 Québec | 504 250 | 836 250 | 436 600 | 892 847 | 355 015 | 468 286 | 518 646 | 659 317 |
| 04 Trois-Rivières | 109 298 | 86 345 | 295 154 | 187 108 | — | — | 84 234 | 35 368 |
| 05 Estrie | — | — | 2 646 | 1 905 | — | — | 4 734 | 3 408 |
| 06 Montréal | 112 522 | 119 893 | 97 927 | 103 375 | 40 971 | 18 756 | 113 138 | 49 820 |
| 07 Outaouais | — | — | — | — | — | — | — | — |
| 08 Abitibi — Témiscamingue | — | — | — | — | 60 406 | 23 061 | 29 000 | 8 310 |
| 09 Côte-Nord | 127 968 | 112 645 | 123 683 | 192 712 | 58 821 | 33 586 | 185 771 | 57 158 |
| **Total** | **1 821 809** | **2 160 980** | **1 789 609** | **2 188 786** | **2 447 997** | **2 468 749** | **3 206 541** | **3 052 129** |

# 3.2 Other Insects and Diseases

## Current Situation by Administrative Region

| | THE MER'S ADMINISTRATIVE REGIONS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
| Distribution of sampling by groups of species | | | | | | | | | |
| — Hardwoods 100% | 10 | 6 | 17 | 12 | 6 | 20 | 10 | 13 | 6 |
| — Softwoods 100% | 19 | 11 | 16 | 13 | 17 | 10 | 9 | 9 | 6 |
| Insects most detrimental to the forest apart from the spruce budworm | Spruce bud moth | Swaine jack-pine sawfly | White pine weevil | Swaine jack-pine sawfly | White pine weevil | Bruce spanworm | Bruce spanworm | Forest tent caterpillar | Larch aspen tortrix |
| | Poplar serpentine leafminer | Larch aspen tortrix | Birch casebearer | White pine weevil | | Gypsy moth | Gypsy moth | White pine weevil | Poplar serpentine leafminer |
| Most prevalent diseases | Gremmeniella canker | Western gall rust | Hardwood dieback | Gremmeniella canker | Climatic damages | Gremmeniella canker | Gremmeniella canker | Western gall rust | Gremmeniella canker |
| | | | Gremmeniella canker | Hardwood dieback | Hardwood dieback | Dutch elm disease | White pine blister rust | Gremmeniella canker | |

## Entomological and Pathological Problems

### a) Softwoods

| SPECIES/ INSECTS AND DISEASES | MER ADM. REGIONS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
| **SPRUCE (plantations)** | | | | | | | | | |
| — Spruce budworm | L | T | T | T | T | T | — | — | T |
| — Spruce bud moth | L | — | T | — | T | T | T | — | T |
| — White pine weevil | L | — | L | L | L | M | L | L | — |
| **BALSAM FIR** | | | | | | | | | |
| — Spruce budworm | M | L | L | M | — | M | — | — | H |
| **PINE (plantations)** | | | | | | | | | |
| — Gremmeniella canker | M | T | T | L | T | L | L | T | H |
| **RED PINE (plantations)** | | | | | | | | | |
| — Red-headed pine sawfly | — | — | — | T | — | T | T | — | — |
| **JACK PINE** | | | | | | | | | |
| — Swaine jack-pine sawfly | T | L | — | L | — | T | T | — | — |
| — Western gall rust | — | M | — | — | — | — | — | M | M |
| **EASTERN WHITE PINE** | | | | | | | | | |
| — White pine blister rust | T | — | M | T | T | L | T | L | — |

### b) Hardwoods

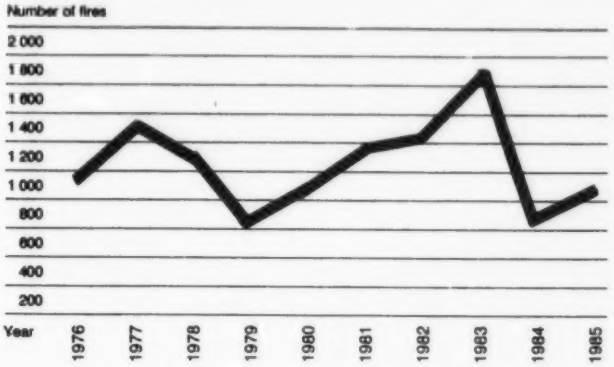
| SPECIES/ INSECTS AND DISEASES | MER ADM. REGIONS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
| **WHITE BIRCH** | | | | | | | | | |
| — Birch casebearer | T | L | M | M | — | — | — | — | T |
| **YELLOW BIRCH, OAK, MAPLE, ASH, BEECH** | | | | | | | | | |
| — Dieback | T | T | M | L | L | L | L | T | — |
| **SUGAR MAPLE, POPLAR** | | | | | | | | | |
| — Bruce spanworm | — | — | — | T | T | L | H | — | — |
| **AMERICAN ELM** | | | | | | | | | |
| — Dutch elm disease | T | T | M | M | M | M | H | T | — |
| **OAK, POPLAR, BIRCH, MAPLE** | | | | | | | | | |
| — Gypsy moth | — | — | T | T | T | L | M | — | — |
| — Forest tent caterpillar | — | — | — | T | — | — | T | H | — |

Note H = High
M = Moderate
T = Trace
L = Light

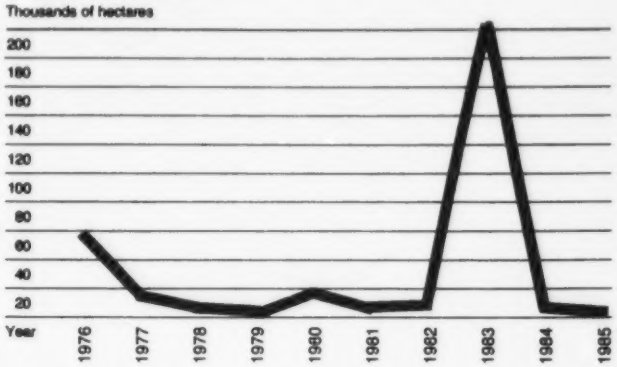
# 3 Forest Protection

## 3.3 Forest Fires

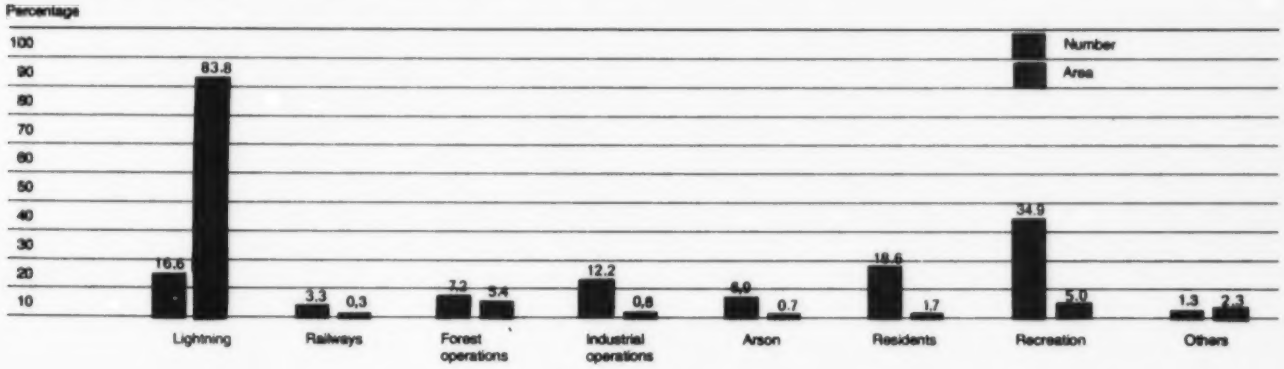
### Number of Fires




### Areas Burned




### Forest Fires between 1976 and 1985 Distribution According to Cause *(%)*




### Areas Destroyed by Forest Fire *(hectares)*

| TYPES OF STANDS | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Mature | 8 958 | 677 | 1 239 | 1 807 | 1 552 | 5 818 | 173 516 | 1 502 | 1 077 | 222 097 |
| Immature | 1 718 | 581 | 712 | 2 532 | 364 | 905 | 27 245 | 545 | 654 | 46 039 |
| Regenerated | 435 | 201 | 543 | 564 | 224 | 385 | 5 977 | 365 | 161 | 15 048 |
| Regenerating (after harvesting) | 2 320 | 1 334 | 569 | 2 329 | 239 | 681 | 15 431 | 636 | 501 | 32 658 |
| Others | 746 | 878 | 137 | 5 855 | 71 | 85 | 16 492 | 10 | 243 | 29 918 |
| **Total** | **14 177** | **3 671** | **3 200** | **13 087** | **2 450** | **7 874** | **238 661** | **3 058** | **2 636** | **345 760** |

## 3.3 Forest Fires (continued)

### Distribution by the MER's Administrative Regions

| | | Administrative Regions | | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | |
| 1976 | N | 86 | 169 | 68 | 59 | 7 | 67 | 199 | 227 | 114 | 0 | 996 |
| | S | 264 | 30 924 | 63 | 239 | 14 | 85 | 650 | 4 212 | 20 491 | 0 | 56 942 |
| 1977 | N | 74 | 131 | 96 | 146 | 19 | 129 | 363 | 307 | 56 | 0 | 1 321 |
| | S | 44 | 677 | 260 | 2 673 | 82 | 2 271 | 2 993 | 5 131 | 40 | 0 | 14 171 |
| 1978 | N | 112 | 147 | 115 | 103 | 15 | 132 | 192 | 181 | 163 | 0 | 1 160 |
| | S | 1 043 | 619 | 294 | 392 | 19 | 85 | 240 | 601 | 371 | 0 | 3 664 |
| 1979 | N | 36 | 89 | 70 | 55 | 20 | 41 | 76 | 144 | 84 | 0 | 615 |
| | S | 50 | 212 | 68 | 34 | 7 | 85 | 62 | 380 | 2 303 | 0 | 3 201 |
| 1980 | N | 26 | 168 | 103 | 76 | 13 | 92 | 112 | 184 | 87 | 9 | 851 |
| | S | 28 | 4 133 | 125 | 142 | 14 | 191 | 176 | 8 089 | 279 | 0 | 13 177 |
| 1981 | N | 24 | 235 | 113 | 89 | 18 | 119 | 103 | 315 | 98 | 0 | 1 114 |
| | S | 14 | 1 350 | 88 | 309 | 5 | 146 | 100 | 335 | 134 | 0 | 2 481 |
| 1982 | N | 40 | 194 | 121 | 121 | 22 | 176 | 250 | 231 | 47 | 0 | 1 202 |
| | S | 44 | 1 953 | 119 | 4 828 | 16 | 222 | 293 | 131 | 364 | 0 | 7 970 |
| 1983 | N | 80 | 281 | 189 | 199 | 12 | 157 | 233 | 367 | 135 | 0 | 1 653 |
| | S | 146 | 161 294 | 399 | 73 853 | 2 | 127 | 534 | 2 380 | 167 | 0 | 238 902 |
| 1984 | N | 45 | 97 | 70 | 67 | 27 | 79 | 92 | 161 | 45 | 0 | 683 |
| | S | 87 | 2 052 | 112 | 147 | 26 | 118 | 68 | 364 | 108 | 0 | 3 082 |
| 1985 | N | 67 | 126 | 85 | 83 | 16 | 129 | 128 | 177 | 69 | 0 | 880 |
| | S | 75 | 598 | 112 | 176 | 12 | 251 | 164 | 1 219 | 90 | 0 | 2 697 |
| **Total** | **N** | **590** | **1 637** | **1 030** | **998** | **169** | **1 121** | **1 748** | **2 294** | **898** | **0** | **10 485** |
| | **S** | **1 795** | **203 812** | **1 640** | **82 793** | **197** | **3 581** | **5 280** | **22 842** | **24 347** | **0** | **346 287** |
| **Average** | **N** | **59** | **164** | **103** | **100** | **17** | **112** | **175** | **229** | **90** | **0** | **1 049** |
| | **S** | **180** | **20 381** | **164** | **8 279** | **20** | **358** | **528** | **2 284** | **2 435** | **0** | **34 629** |

Note: N = number of fires
A = areas destroyed (in hectares)

### Distribution of Fire Protection *(intensive protection zone)**

| Parties Involved | | Costs in 1984 (million $) | | | Costs in 1985 (million $) | | |
|---|---|---|---|---|---|---|---|
| | | Organization | Extinguishing | Total | Organization | Extinguishing | Total |
| Government | $ | 15.59 | 0.87 | 16.46 | 14.84 | 1.47 | 16.31 |
| | % | 68.1 | 85.3 | 68.8 | 61.2 | 85.5 | 62.8 |
| Members of other conservation societies | $ | 4.60 | 0.15 | 4.75 | 4.72 | 0.25 | 4.97 |
| | % | 20.1 | 14.7 | 19.9 | 19.5 | 14.5 | 19.1 |
| Holders of commercial logging permits | $ | 2.71 | — | 2.71 | 4.69 | — | 4.69 |
| | % | 11.8 | — | 11.3 | 19.3 | — | 18.1 |
| **Total** | **$** | **22.90** | **1.02** | **23.92** | **24.25** | **1.72** | **25.97** |
| | **%** | **100** | **100** | **100** | **100** | **100** | **100** |

*Intensive protection: Systematic fight against all fires likely to damage the forest, as soon as they are discovered, combined with preventive measures.

Intensive protection zone: All forests under management and the territory surrounding them. This zone covers more than 70% of the commercial forest region. It extends from the most southerly part of Québec to about the 51st parallel.

# 4 Forest Management

## 4.1 Annual Allowable Cut

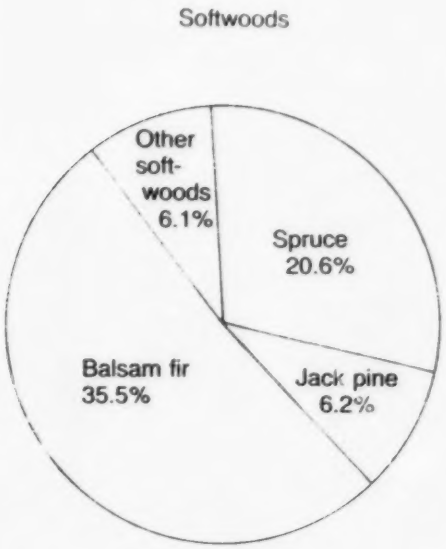
### A. Introduction

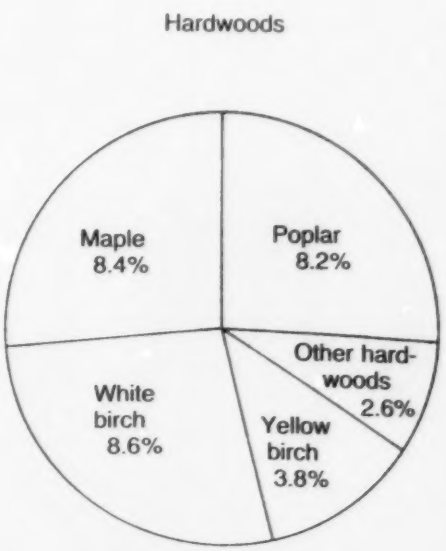
The annual allowable cut for Québec's public forests was revised in 1986, and was dealt with in a publication. It was calculated usin 225 000 km² of the productive forest land in the commuter operations zone and the pulpwood and sawlogs operation zone. Th annual allowable cut for small and large private forest land was calculated using an area of 63 000 km².

### B. Annual Allowable Cut, by the MER's Administrative Regions

| | In Public Forests | | | In Private Forests | | | Total | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Balsam Fir, Spruce, Jack Pine 1 000 m³ | Other Soft-woods 1 000 m³ | Hard-woods 1 000 m³ | Balsam Fir, Spruce, Jack Pine 1 000 m³ | Other Soft-woods 1 000 m³ | Hard-woods 1 000 m³ | Balsam Fir, Spruce, Jack Pine 1 000 m³ | Other Soft-woods 1 000 m³ | Hard-woods 1 000 m³ | All Species 1 000 m³ |
| 01 Bas-Saint-Laurent — Gaspésie | 2 560 | 160 | 490 | 1 091 | 208 | 645 | 3 651 | 368 | 1 135 | 5 154 |
| 02 Saguenay — Lac-Saint-Jean | 6 757 | 16 | 1 483 | 157 | 25 | 231 | 6 914 | 41 | 1 714 | 8 669 |
| 03 Québec | 792 | 18 | 244 | 1 275 | 243 | 1 488 | 2 067 | 261 | 1 732 | 4 060 |
| 04 Trois-Rivières | 3 055 | 82 | 904 | 477 | 214 | 737 | 3 532 | 296 | 1 641 | 5 469 |
| 05 Estrie | 23 | 2 | 26 | 368 | 157 | 781 | 391 | 159 | 807 | 1 357 |
| 06 Montréal | 480 | 49 | 382 | 326 | 340 | 1 594 | 806 | 389 | 1 976 | 3 171 |
| 07 Outaouais | 2 066 | 527 | 1 960 | 239 | 291 | 1 070 | 2 305 | 818 | 3 030 | 6 153 |
| 08 Abitibi — Témiscamingue | 5 556 | 540 | 2 062 | 121 | 5 | 300 | 5 677 | 545 | 2 362 | 8 584 |
| 09 Côte-Nord | 4 088 | 13 | 471 | 160 | 7 | 113 | 4 248 | 20 | 584 | 4 852 |
| **TOTAL** | **25 377** | **1 407** | **8 022** | **4 214** | **1 490** | **6 959** | **29 591** | **2 897** | **14 981** | **47 469** |

### C. Distribution of the Annual Allowable Cut, by Species *(public and private forests)*



# 4 Forest Management

## 4.2 Harvest

### Volume of Wood Harvested in Québec

### A) By Socioeconomic Zone

| | Zones | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1984-1985 | | | | | | | 1985-1986 | | | | | | | | |
| | Commuter | | Pulpwood and Sawlogs | | Pulp-wood | | Total | | Commuter | | Pulpwood and Sawlogs | | Pulp-wood | | Total | |
| | 1 000 m³ | % | 1 000 m³ | % | 1 000 m³ | % | 1 000 m³ | % | 1 000 m³ | % | 1 000 m³ | % | 1 000 m³ | % | 1 000 m³ | % |
| **Total annual harvest** | **20 969** | **100** | **10 211** | **100** | **32** | **100** | **31 232** | **100** | **20 879** | **100** | **9 712** | **100** | **77** | **100** | **30 668** | **100** |
| Softwoods | 16 672 | 79 | 4 931 | 97 | 32 | 100 | 26 635 | 85 | 16 709 | 80 | 9 475 | 98 | 77 | 100 | 26 261 | 86 |
| Hardwoods | 4 317 | 21 | 280 | 3 | — | — | 4 597 | 15 | 4 170 | 20 | 237 | 2 | — | — | 4 407 | 14 |
| **Québec public forests** | **13 762** | **66** | **10 211** | **100** | **32** | **100** | **24 005** | **85** | **13 434** | **64** | **9 712** | **100** | **77** | **100** | **23 223** | **76** |
| Softwoods | 11 430 | 83 | 9 931 | 97 | 32 | 100 | 21 393 | 89 | 11 246 | 84 | 9 475 | 98 | 77 | 100 | 20 798 | 90 |
| Hardwoods | 2 332 | 17 | 280 | 3 | — | — | 2 612 | 11 | 2 188 | 16 | 237 | 2 | — | — | 2 425 | 10 |
| **Private forests*** | **7 227** | **34** | — | — | — | — | **7 227** | **15** | **7 445** | **36** | — | — | — | — | **7 445** | **24** |
| Softwoods | 5 242 | 73 | — | — | — | — | 5 242 | 73 | 5 463 | 73 | — | — | — | — | 5 463 | 73 |
| Hardwoods | 1 985 | 27 | — | — | — | — | 1 985 | 27 | 1 982 | 27 | — | — | — | — | 1 982 | 27 |

* Estimate

### B) By the MER's Administrative Regions *('000 m³)*

#### 1984-1985

| | Public Forests | | | Private Forests[1] | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | Softwoods | Hardwoods | Total | Softwoods | Hardwoods | Total | Softwoods | Hardwoods | Total |
| 01 Bas-Saint-Laurent — Gaspésie | 2 575 | 276 | 2 851 | 1 724 | 455 | 2 179 | 4 299 | 731 | 5 030 |
| 02 Saguenay — Lac-Saint-Jean | 7 103 | 284 | 7 387 | 223 | 52 | 275 | 7 326 | 336 | 7 662 |
| 03 Québec | 1 255 | 122 | 1 377 | 1 894 | 286 | 2 180 | 3 149 | 408 | 3 557 |
| 04 Trois-Rivières | 1 808 | 364 | 2 172 | 293 | 117 | 410 | 2 101 | 481 | 2 582 |
| 05 Estrie | 37 | 19 | 56 | 439 | 364 | 803 | 476 | 383 | 859 |
| 06 Montréal | 747 | 254 | 1 001 | 319 | 301 | 620 | 1 066 | 555 | 1 621 |
| 07 Outaouais | 1 312 | 590 | 1 902 | 266 | 352 | 618 | 1 578 | 942 | 2 520 |
| 08 Abitibi — Témiscamingue | 4 465 | 664 | 5 129 | 47 | 57 | 104 | 4 512 | 721 | 5 233 |
| 09 Côte-Nord | 2 091 | 39 | 2 130 | 37 | 1 | 38 | 2 128 | 40 | 2 168 |
| **Total** | **21 393** | **2 612** | **24 005** | **5 242** | **1 985** | **7 227** | **26 635** | **4 597** | **31 232** |

#### 1985-1986

| | Public Forests | | | Private Forests[1] | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | Softwoods | Hardwoods | Total | Softwoods | Hardwoods | Total | Softwoods | Hardwoods | Total |
| 01 Bas-Saint-Laurent — Gaspésie | 2 725 | 222 | 2 947 | 1 759 | 451 | 2 210 | 4 484 | 673 | 5 157 |
| 02 Saguenay — Lac-Saint-Jean | 6 187 | 229 | 6 416 | 293 | 18 | 311 | 6 480 | 247 | 6 727 |
| 03 Québec | 1 232 | 135 | 1 367 | 1 947 | 239 | 2 186 | 3 179 | 374 | 3 553 |
| 04 Trois-Rivières | 1 427 | 324 | 1 751 | 265 | 121 | 386 | 1 692 | 445 | 2 137 |
| 05 Estrie | 31 | 38 | 69 | 287 | 341 | 628 | 318 | 379 | 697 |
| 06 Montréal | 796 | 232 | 2 028 | 540 | 408 | 948 | 1 336 | 640 | 1 976 |
| 07 Outaouais | 1 024 | 541 | 1 565 | 236 | 266 | 502 | 1 260 | 807 | 2 067 |
| 08 Abitibi — Témiscamingue | 5 358 | 688 | 6 046 | 91 | 136 | 227 | 5 449 | 824 | 6 273 |
| 09 Côte-Nord | 2 018 | 16 | 2 034 | 45 | 2 | 47 | 2 063 | 18 | 2 081 |
| Total | **20 798** | **2 425** | **23 223** | **5 463** | **1 982** | **7 445** | **26 261** | **4 407** | **30 668** |

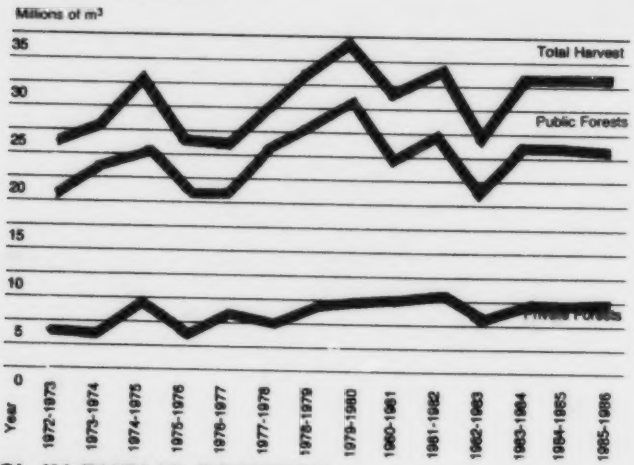
[1] Estimated data, excluding the production of firewood by small woodlot owners

# 4 Forest Management

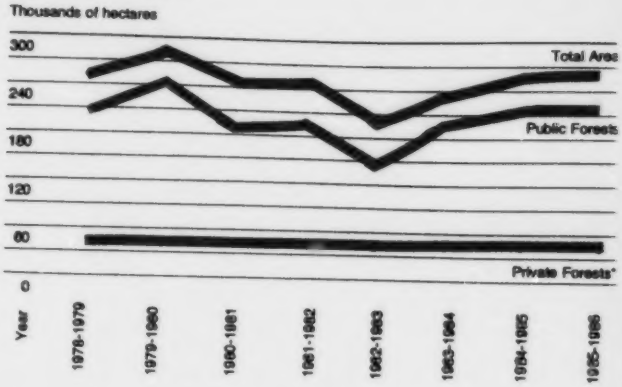
## 4.2 Harvest (continued)

### Evolution of the Harvest *(excluding firewood)*

### A) BY VOLUME

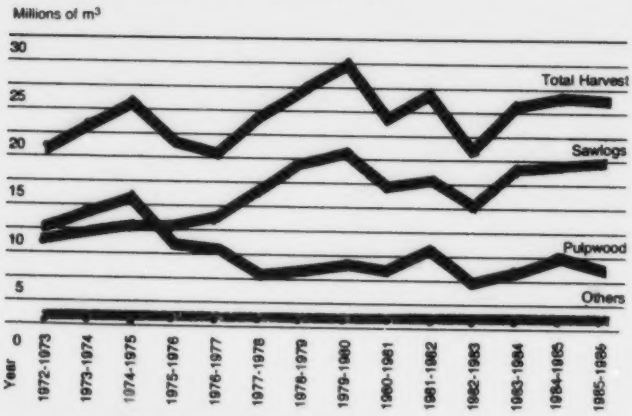



### B) BY AREA

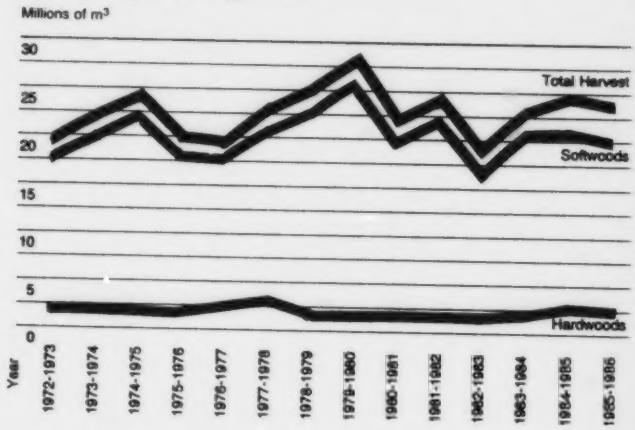



* Estimate made by the Fédération des producteurs de bois du Québec.

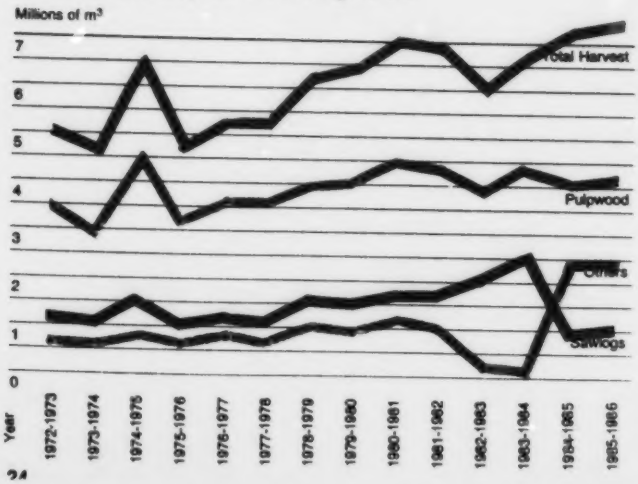
### C) IN PUBLIC FORESTS *According to Primary Use*



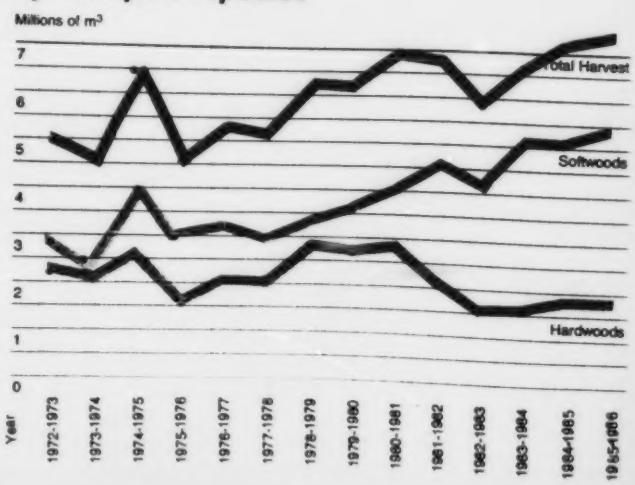

### *By Groups of Species*




### D) IN PRIVATE FORESTS *According to Primary Use*

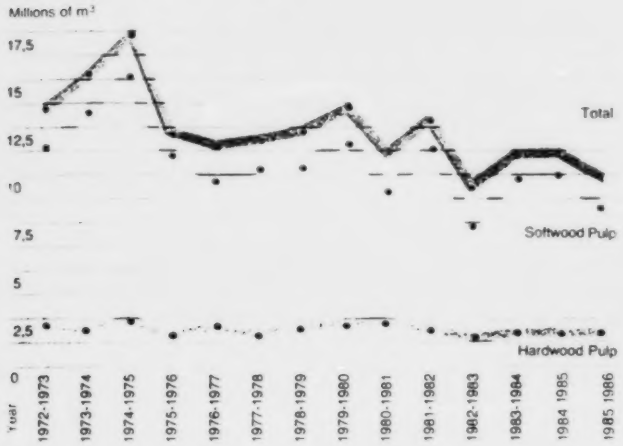



### *By Groups of Species*



# 4.2 Harvest (continued)

## E) PULPWOOD *in Public and Private Forests, by Groups of Species*




## Transportation of Logs from Public Forests to Mills

| Means of Transportation | 1984-1985 | 1985-1986 |
|---|---|---|
| Truck | 76% | 76% |
| River drive | 22% | 23% |
| Railroad | 2% | 1% |

## River Drive

| | 1984-1985 | 1985-1986 |
|---|---|---|
| Network length (km) | 1 980 | 1 980 |
| Volume driven (1 000 m³) | 5 300 | 5 200 |
| Average distance driven (km) | 240 | 240 |

## Logging Systems in Public Forests

| | 1983-1984 | | | 1984-1985 | | | 1985-1986 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mechanical | Manual | Total | Mechanical | Manual | Total | Mechanical | Manual | Total |
| Full tree* | 44% | 22% | 66% | 40% | 28% | 68% | 41% | 29% | 70% |
| Tree length* | — | 28% | 28% | 1% | 24% | 25% | 1% | 23% | 24% |
| Shortwood** | 3% | 3% | 6% | 2% | 5% | 7% | 3% | 3% | 6% |
| **Total** | **47%** | **53%** | **100%** | **43%** | **57%** | **100%** | **45%** | **55%** | **100%** |

* Part of this wood is crosscut at the jetty for river driving

** Includes only timber crosscut at the stump

## Volume of the Harvest from Private Forests Marketed by Syndicates and Marketing Boards

| Syndicate or Board | 1982 | | 1983 | | 1984 | | 1985 | |
|---|---|---|---|---|---|---|---|---|
| | Harvest m³ stacked* | Number of Producers | Harvest m³ stacked* | Number of Producers | Harvest m³ stacked* | Number of Producers | Harvest m³ stacked* | Number of Producers |
| Gaspésie | 413 481 | 2 423 | 507 802 | 2 630 | 588 361 | 2 365 | 559 684 | 2 485 |
| Bas-Saint-Laurent | 996 015 | 3 500 | 1 379 811 | 5 518 | 1 161 898 | 4 715 | 1 234 249 | 6 225 |
| Saguenay — Lac-Saint-Jean | 324 471 | 1 702 | 366 130 | 1 927 | 283 763 | 1 584 | 311 320 | 1 500 |
| La Pocatière | 443 680 | 4 000 | 451 890 | 3 000 | 425 570 | 2 200 | 394 450 | 2 339 |
| Beauce | 592 563 | 4 900 | 612 204 | 5 310 | 806 672 | 4 871 | 798 726 | 4 741 |
| Québec | 828 940 | 5 000 | 802 396 | 6 393 | 777 513 | 5 512 | 785 526 | 5 300 |
| Estrie | 568 396 | 2 429 | 586 601 | 1 927 | 653 418 | 2 253 | 510 867 | 1 983 |
| Nicolet | 131 517 | 506 | 141 559 | 800 | 148 627 | 600 | 148 665 | 750 |
| Mauricie | 197 545 | 340 | 188 414 | 332 | 242 587 | 284 | 219 168 | 350 |
| Montréal | — | — | 91 935 | 200 | 102 402 | 100 | 134 437 | 200 |
| Laurentides | 414 173 | 700 | 397 643 | 700 | 362 751 | 700 | 336 937 | 600 |
| Labelle | 245 991 | 530 | 200 623 | 530 | 206 896 | 525 | 230 201 | 525 |
| Gatineau | 142 055 | 400 | 127 196 | 400 | 131 175 | 390 | 147 635 | 390 |
| Pontiac | — | — | — | — | — | — | 270 295 | 375 |
| Abitibi — Témiscamingue | 203 361 | 269 | 189 228 | 338 | 141 820 | 201 | 226 991 | 285 |
| **Total** | **5 502 188** | **26 699** | **6 043 432** | **30 005** | **6 033 453** | **26 300** | **6 309 151** | **28 048** |

* 1 m³ solid = 1.5 m³ stacked

# 4 Forest Management

## 4.3 Infrastructure for the Transportation of Roundwood from Public Forests to Mills

### The MER's Network of Permanent Forest Roads 1984-1985

| Administrative Region | SOCIOECONOMIC ZONES | | | | | | TOTAL | |
|---|---|---|---|---|---|---|---|---|
| | Commuter | | Pulpwood-Sawlogs | | Pulpwood | | | |
| | Roads (km) | Bridges (number) | Roads (km) | Bridges (number) | Roads (km) | Bridges (number) | Roads (km) | Bridges (number) |
| 01 Bas-Saint-Laurent — Gaspésie | 1 240 | 117 | — | — | — | — | 1 240 | 117 |
| 02 Saguenay — Lac-Saint-Jean | 1 199 | 61 | 557 | 35 | 1 | — | 1 757 | 96 |
| 03 Québec | 239 | 19 | — | — | — | — | 239 | 19 |
| 04 Trois-Rivières | 90 | 7 | 653 | 19 | — | — | 643 | 26 |
| 05 Estrie | — | — | — | — | — | — | — | — |
| 06 Montréal | 83 | 4 | — | — | — | — | 83 | 4 |
| 07 Outaouais | 324 | 9 | 580 | 27 | — | — | 904 | 36 |
| 08 Abitibi — Témiscamingue | 631 | 29 | 865 | 37 | — | — | 1 496 | 66 |
| 09 Côte-Nord | 450 | 29 | 120 | — | 130 | 5 | 700 | 34 |
| **TOTAL** | **4 256** | **275** | **2 775** | **118** | **131** | **5** | **7 162** | **398** |

### 1985-1986

| Administrative Region | SOCIOECONOMIC ZONES | | | | | | TOTAL | |
|---|---|---|---|---|---|---|---|---|
| | Commuter | | Pulpwood-Sawlogs | | Pulpwood | | | |
| | Roads (km) | Bridges (number) | Roads (km) | Bridges (number) | Roads (km) | Bridges (number) | Roads (km) | Bridges (number) |
| 01 Bas-Saint-Laurent — Gaspésie | 1 242 | 120 | — | — | — | — | 1 242 | 120 |
| 02 Saguenay — Lac-Saint-Jean | 1 227 | 61 | 592 | 36 | 1 | — | 1 820 | 97 |
| 03 Québec | 257 | 20 | — | — | — | — | 257 | 20 |
| 04 Trois-Rivières | 108 | 7 | 656 | 19 | — | — | 764 | 26 |
| 05 Estrie | — | — | — | — | — | — | — | — |
| 06 Montréal | 83 | 7 | — | — | — | — | 83 | 7 |
| 07 Outaouais | 324 | 9 | 580 | 27 | — | — | 904 | 36 |
| 08 Abitibi — Témiscamingue | 634 | 29 | 883 | 38 | — | — | 1 517 | 67 |
| 09 Côte-Nord | 451 | 29 | 131 | — | 144 | 5 | 726 | 34 |
| **TOTAL** | **4 326** | **282** | **2 842** | **120** | **145** | **5** | **7 313** | **407** |

### Network of Rivers Used for Driving *(km)*

(1984-1985 / 1985-1986)

| Administrative Region | SOCIOECONOMIC ZONES | | TOTAL |
|---|---|---|---|
| | Commuter | Pulpwood-Sawlogs | |
| 02 Saguenay — Lac-Saint-Jean | 231 | 87 | 318 |
| 04 Trois-Rivières | 350 | 262 | 612 |
| 07 Outaouais | 588 | 262 | 850 |
| 09 Côte-Nord | 156 | 44 | 200 |
| **TOTAL** | **1 325** | **655** | **1 980** |

### Railway Network Used for Transporting Roundwood *(km)*

(1984-1985 / 1985-1986)

| Administrative Region | SOCIOECONOMIC ZONES | | TOTAL |
|---|---|---|---|
| | Commuter | Pulpwood-Sawlogs | |
| 02 Saguenay — Lac-Saint-Jean | 237 | 125 | 362 |
| 04 Trois-Rivières | 356 | 81 | 437 |
| **TOTAL** | **593** | **206** | **799** |

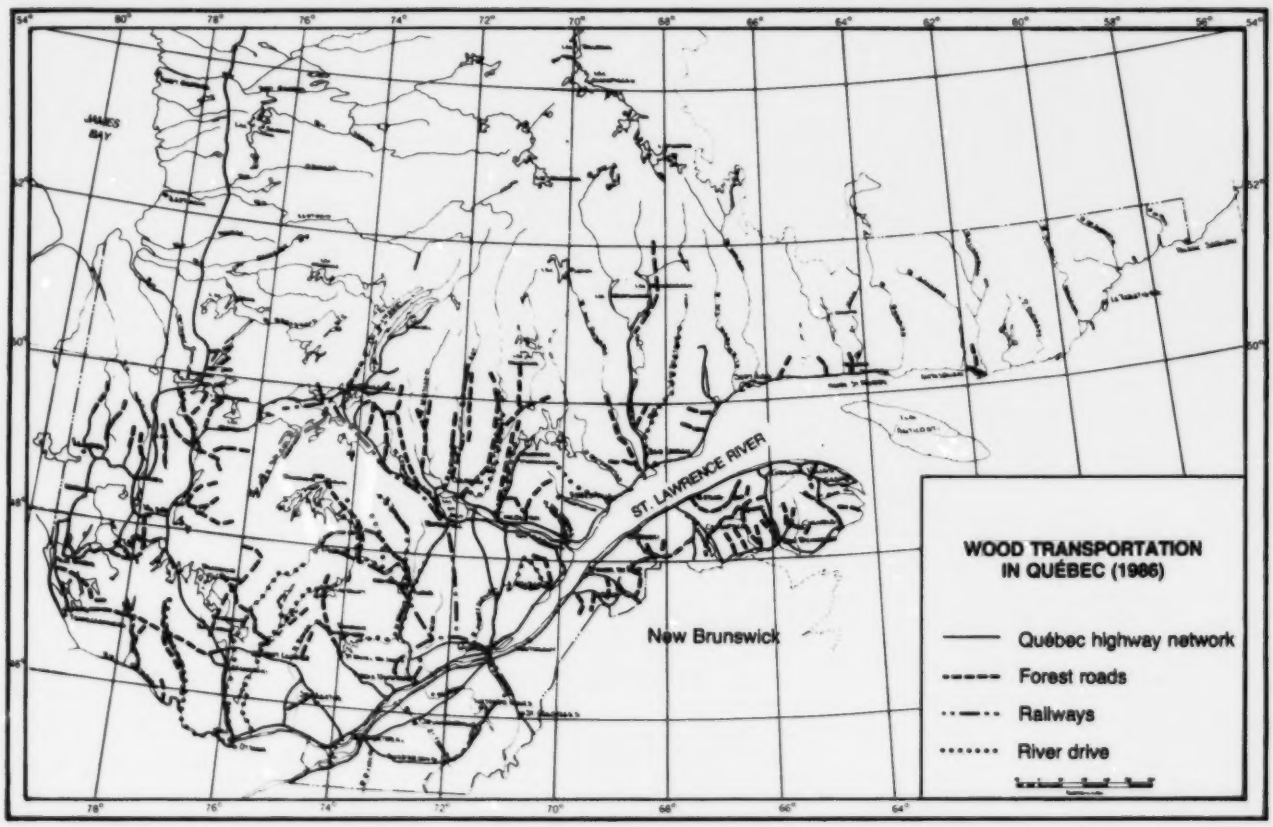
### Construction and Improvement of Forest Roads *(km)* and Bridges *(units)*

| | CONSTRUCTION | | | | | | IMPROVEMENT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MER | | Users | | % of Network /1975 | | MER | | Users | | % of Network /1975 | |
| | Roads | Bridges | Roads | Bridges | Roads | Bridges | Roads | Bridges | Roads | Bridges | Roads | Bridges |
| 1980 | 72 | 2 | 450 | 26 | 11.7 | 11.9 | — | — | 355 | 8 | 6.6 | 2.5 |
| 1981 | 56 | 1 | 464 | 27 | 11.6 | 11.9 | — | — | 311 | 6 | 5.3 | 1.7 |
| 1982 | 78 | — | 178 | 8 | 5.7 | 3.4 | — | — | 154 | 3 | 2.4 | 0.8 |
| 1983 | 29 | — | 269 | 9 | 6.7 | 3.8 | 16 | — | 245 | 6 | 3.9 | 1.6 |
| 1984 | 29 | — | 188 | 8 | 4.9 | 3.4 | — | — | 103 | 2 | 1.5 | 0.5 |
| 1985 | 14 | — | 137 | 9 | 3.4 | 3.8 | — | — | 51 | 3 | 0.7 | 0.8 |

# 4 Forest Management

## 4.3 Infrastructure for the Transportation of Roundwood from Public Forests to Mills (continued)

### Transportation of Roundwood



# 4 Forest Management

## 4.4 Reforestation

### Harvesting of Cones (in hectolitres) by Species and by the MER's Administrative Regions in 1984-1985

| SPECIES | THE MER'S ADMINISTRATIVE REGIONS | | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | |
| Balsam fir | 2.0 | | | 17.4 | 66.5 | 43.2 | 63.4 | | | 192.5 |
| European larch | | | | | | 4.8 | | | | 4.8 |
| Tamarack | 504.2 | 0.7 | 26.9 | 22.4 | 8.9 | 68.6 | 9.7 | 106.3 | | 747.7 |
| Red spruce | | | | | | 5.0 | 13.2 | | | 18.2 |
| Norway spruce | 364.9 | | 76.0 | 969.3 | 586.3 | 1 425.2 | 230.1 | 15.8 | 74.9 | 3 742.5 |
| White spruce | 8 263.6 | 95.9 | 8 974.0 | 1 247.6 | 2 305.2 | 8 943.4 | 2 603.6 | 546.1 | 570.6 | 33 550.0 |
| Black spruce | 1 308.9 | 1 392.7 | 1.0 | 542.4 | 4.0 | 1 012.0 | 589.0 | 123.1 | 745.4 | 5 718.5 |
| Japanese larch | | | 18.6 | 37.5 | 40.7 | 134.4 | 162.3 | | | 393.5 |
| Jack pine | | 658.7 | | 234.7 | | | | 5 563.1 | 19.2 | 6 475.7 |
| Red pine | | | | 416.9 | 20.7 | 337.1 | 18.4 | 28.6 | | 821.7 |
| Eastern white pine | | 2.8 | | 42.0 | | 245.8 | 37.6 | 452.4 | 16.0 | 796.6 |
| Red oak | | | | | | 3.2 | | | | 3.2 |
| **TOTAL** | **10 443.6** | **2 150.8** | **9 096.5** | **3 530.2** | **3 032.3** | **12 222.7** | **3 727.3** | **6 835.4** | **1 426.1** | **52 464.9** |

### Harvesting of Cones (in hectolitres) by Species and by the MER's Administrative Regions in 1985-1986

| SPECIES | THE MER'S ADMINISTRATIVE REGIONS | | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | |
| Black spruce | 769.45 | 35.56 | | 241.18 | | | 16.00 | | | 1 062.19 |
| Jack pine | 109.36 | 645.89 | | 1 034.81 | | | 43.67 | 243.90 | 36.20 | 2 113.83 |
| Red pine | 5.77 | 38.15 | 90.05 | 612.50 | 142.77 | 163.90 | 225.26 | 26.80 | 4.00 | 1 309.20 |
| Eastern white pine | | | 72.30 | 264.08 | 163.58 | | 235.72 | 469.00 | 20.00 | 1 224.68 |
| Scots pine | | | | 64.00 | | | | | | 64.00 |
| Red ash | | | | 0.30 | | | 6.55 | | | 6.85 |
| Butternut | | | | 0.11 | | | 0.73 | | | 0.84 |
| Black walnut | | | | | | 11.30 | 0.99 | | | 12.29 |
| Black cherry | | | | | | 0.20 | 0.66 | | | 0.86 |
| White oak | | | | | | 2.70 | 0.65 | | | 3.35 |
| Red oak | | | | 1.73 | | 3.30 | 1.05 | 0.50 | | 6.58 |
| Basswood | | | | | | | 0.26 | | | 0.26 |
| Others | | | | 0.01 | | | 0.02 | | | 0.03 |
| **TOTAL** | **884.58** | **719.60** | **162.35** | **2 218.72** | **306.35** | **181.40** | **531.56** | **740.20** | **60.20** | **5 804.96** |

### Area of Seed Tree Orchards *(hectares)*

| SPECIES | THE MER'S ADMINISTRATIVE REGIONS | | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | |
| Dunkeld larch | 1.0 | | | | | | | | | 1.0 |
| Tamarack | 4.3 | | | | | | | | | 4.3 |
| White spruce | 26.8 | | 21.0 | 8.0 | | | | | | 55.8 |
| Black spruce | 144.0 | 56.3 | 24.0 | | | 40.0 | | 16.0 | | 280.3 |
| Jack pine | | 12.5 | | 27.7 | | 68.3 | | 69.6 | | 178.1 |
| Red pine | | | | | | 2.7 | | | | 2.7 |
| Eastern white pine | | | 4.0 | | | 4.5 | | | | 8.5 |
| **TOTAL** | **176.1** | **68.8** | **49.0** | **35.7** | | **115.5** | | **85.6** | | **530.7** |

# 4 Forest Management

## 4.4 Reforestation (continued)

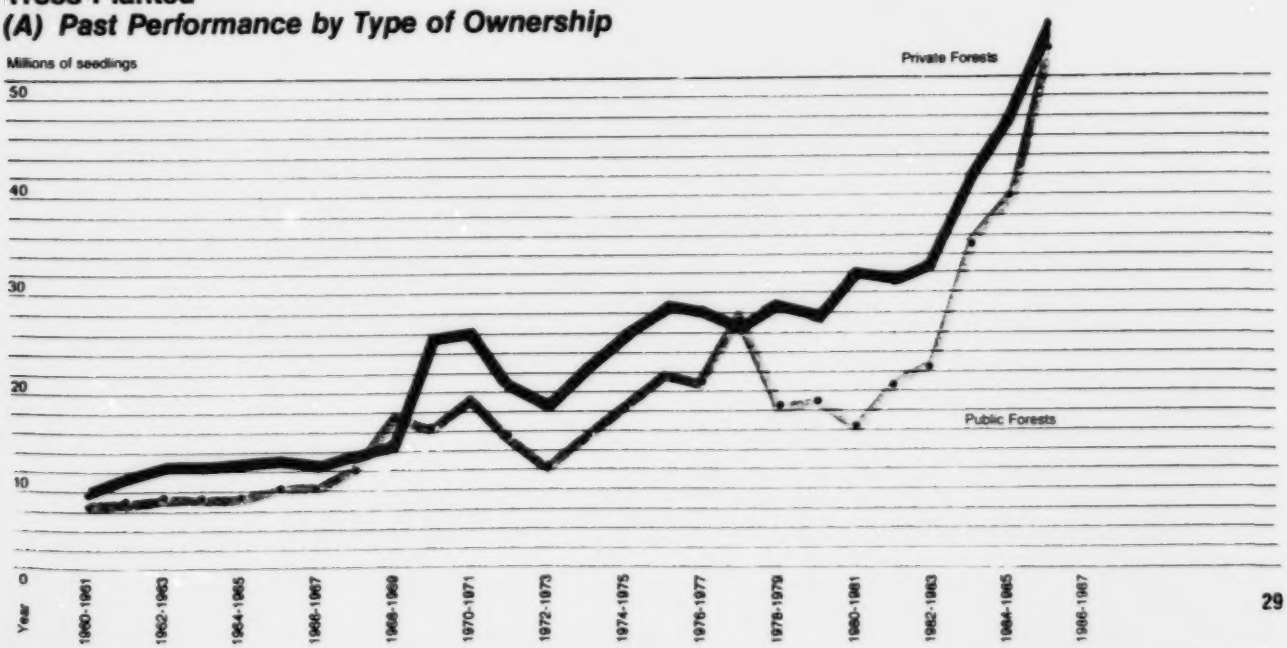
### Seedling Production

| REGION | PRODUCTION* | SEEDLINGS AVAILABLE FOR REFORESTATION ('000) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1984-1985 | | | 1985-1986 | | |
| | | Bare root | Potted | Total | Bare root | Potted | Total |
| 01 Bas-Saint-Laurent—Gaspésie | PU | 18 944 | 1 147 | 20 091 | 26 884 | 1 979 | 28 863 |
| | PR | — | 382 | 382 | — | 613 | 613 |
| | TL | 18 944 | 1 529 | 20 473 | 26 884 | 2 592 | 29 476 |
| 02 Saguenay—Lac-Saint-Jean | PU | 6 003 | 48 | 6 051 | 8 226 | 2 140 | 10 366 |
| | PR | — | 387 | 387 | — | — | — |
| | TL | 6 003 | 435 | 6 438 | 8 226 | 2 140 | 10 366 |
| 03 Québec | PU | 3 848 | — | 3 848 | 5 988 | — | 5 988 |
| | PR | — | 2 769 | 2 769 | 1 015 | 6 070 | 7 085 |
| | TL | 3 848 | 2 769 | 6 617 | 7 003 | 6 070 | 13 073 |
| 04 Trois-Rivières | PU | 3 820 | — | 3 820 | 5 876 | 359 | 6 235 |
| | PR | — | 2 286 | 2 286 | — | 903 | 903 |
| | TL | 3 820 | 2 286 | 6 106 | 5 876 | 1 262 | 7 138 |
| 05 Estrie | PU | — | 9 192 | 9 192 | — | 5 851 | 5 851 |
| | PR | 354 | — | 354 | 2 035 | — | 2 035 |
| | TL | 354 | 9 192 | 9 546 | 2 035 | 5 851 | 7 886 |
| 06 Montréal | PU | 6 836 | — | 6 836 | 11 733 | — | 11 733 |
| | PR | — | 78 | — | 587 | 2 507 | 3 094 |
| | TL | 6 836 | 78 | 6 836 | 12 320 | 2 507 | 14 827 |
| 07 Outaouais | PR | — | — | — | 860 | 250 | 1 110 |
| | TL | — | — | — | 860 | 250 | 1 110 |
| 08 Abitibi—Témiscamingue | PU | 7 581 | — | 7 581 | 6 335 | 793 | 7 128 |
| | PR | — | 4 930 | 4 930 | — | 6 600 | 6 600 |
| | TL | 7 581 | 4 930 | 12 511 | 6 335 | 7 493 | 13 828 |
| 09 Côte-Nord | PR | — | 340 | 340 | — | 440 | 440 |
| | TL | — | 340 | 340 | — | 440 | 440 |
| **Subtotal** | **PU** | **47 032** | **10 387** | **57 419** | **65 042** | **11 122** | **76 164** |
| | **PR** | **354** | **11 172** | **11 526** | **4 497** | **17 383** | **21 880** |
| | **TL** | **47 386** | **21 559** | **68 945** | **69 539** | **28 505** | **98 044** |
| Purchases | | 3 600 | 607 | 4 207 | — | — | — |
| **TOTAL** | | **50 986** | **22 166** | **73 152** | **69 539** | **28 505** | **98 044** |

* PU = Public forests PR = Private forests TL = Total

### Trees Planted

***(A) Past Performance by Type of Ownership***



## 4.4 Reforestation (continued)

### B) Trees Planted in 1984-1985 by Region, Type of Ownership, and Species *('000 seedlings)*

| | | Balsam fir | European larch | Tamarack | Japanese larch | Norway spruce | White spruce | Black spruce | Red spruce | Jack pine | Red pine | White pine | Scots pine | Others | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | PU | | | | | 67 | 1 140 | 6 315 | | 149 | | 22 | | | 7 693 |
| Bas-Saint- | PR | 111 | | | 2 | 2 249 | 4 886 | 3 652 | | 292 | 51 | | 100 | 95 | 11 448 |
| Laurent — | TL | 111 | | | 2 | 2 316 | 6 026 | 9 977 | | 441 | 51 | 22 | 100 | 95 | 19 141 |
| Gaspésie | | | | | | | | | | | | | | | |
| 02 | PU | | | | | | 282 | 1 141 | | 1 578 | | | | | 3 001 |
| Saguenay — | PR | 25 | | | | 6 | 575 | 363 | | 828 | 59 | | 66 | 5 | 1 927 |
| Lac-Saint-Jean | TL | 25 | | | | 6 | 6 867 | 1 504 | | 2 406 | 59 | | 66 | 5 | 4 928 |
| 03 | PU | | | | | 585 | 970 | 1 330 | 222 | 326 | | | | | 3 433 |
| Québec | PR | 1 108 | | 85 | | 1 587 | 2 983 | 2 177 | 770 | 393 | 266 | 99 | 68 | 11 | 9 547 |
| | TL | 1 108 | | 85 | | 2 172 | 3 953 | 3 507 | 992 | 719 | 266 | 99 | 68 | 11 | 12 980 |
| 04 | PU | | | | | | | 3 139 | 234 | 2 057 | | | | | 5 430 |
| Trois-Rivières | PR | 292 | 3 | 15 | 98 | 313 | 832 | | 7 | 1 210 | 921 | 38 | 123 | 5 | 3 859 |
| | TL | 292 | 3 | 15 | 98 | 313 | 832 | 3 139 | 241 | 3 267 | 921 | 38 | 123 | 5 | 9 289 |
| 05 | PU | | | | | | 45 | | | | | | | | 45 |
| Estrie | PR | 1944 | | 11 | 139 | 1 283 | 1 978 | 45 | | | 271 | 63 | 113 | 7 | 5 854 |
| | TL | 1944 | | 11 | 139 | 1 283 | 2 023 | 45 | | | 271 | 63 | 113 | 7 | 5 899 |
| 06 | PU | | | | | 163 | 113 | 218 | | 168 | | | 6 | 3 | 71 |
| Montréal | PR | 431 | | 128 | 7 | 238 | 174 | | 16 | 50 | 274 | 79 | 165 | 102 | 1 664 |
| | TL | 431 | | 128 | 7 | 401 | 287 | 218 | 16 | 218 | 274 | 79 | 171 | 105 | 2 335 |
| 07 | PU | | | 8 | | 271 | | 1 300 | | 913 | 93 | | 170 | | 2 755 |
| Outaouais | PR | 115 | | 163 | | 600 | | | | 664 | 413 | 90 | 239 | | 2 284 |
| | TL | 115 | | 171 | | 871 | | 1 300 | | 1 577 | 506 | 90 | 409 | | 5 039 |
| 08 | PU | | | 6 | | | | 1 903 | | 6 145 | | 52 | | | 8 106 |
| Abitibi — | PR | | | | | | | 643 | | 3 217 | | 16 | | | 3 876 |
| Témiscamingue | TL | | | 6 | | | | 2 546 | | 9 362 | | 68 | | | 11 982 |
| 09 | PU | | | | | | 478 | 544 | | 180 | | | | | 1 202 |
| Côte-Nord | PR | 3 | | | | | 44 | | | 42 | | | | | 89 |
| | TL | 3 | | | | | 522 | 544 | | 222 | | | | | 1 291 |
| | **PU** | | | **14** | | **1 087** | **3 030** | **15 890** | **455** | **11 514** | **93** | **74** | **176** | **3** | **32 336** |
| **TOTAL** | **PR** | **4 029** | **3** | **402** | **246** | **6 278** | **11 472** | **6 890** | **793** | **6 696** | **2 255** | **385** | **874** | **225** | **40 548** |
| | **TL** | **4 029** | **3** | **416** | **246** | **7 365** | **14 502** | **22 780** | **1 248** | **18 210** | **2 348** | **459** | **1 050** | **228** | **72 884** |

### Trees Planted in 1985-1986 by Region, Type of Ownership, and Species *('000 seedlings)*

| | | Balsam fir | European larch | Tamarack | Japanese larch | Norway spruce | White spruce | Black spruce | Red spruce | Jack pine | Red pine | White pine | Scots pine | Others | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | PU | | | | | 1 648 | 77 | 8 483 | | 3 | | 64 | | | 10 275 |
| Bas-Saint- | PR | 152 | | 224 | | 3 226 | 3 681 | 4 254 | 65 | 102 | 233 | | 177 | 45 | 12 159 |
| Laurent — | TL | 152 | | 224 | | 4 874 | 3 758 | 12 737 | 65 | 105 | 233 | 64 | 177 | 45 | 22 434 |
| Gaspésie | | | | | | | | | | | | | | | |
| 02 | PU | | | 46 | | | 95 | 3 704 | | 3 869 | | 5 | | | 7 719 |
| Saguenay — | PR | 29 | | 21 | | 21 | 296 | 625 | | 327 | 34 | | 99 | | 1 452 |
| Lac-Saint-Jean | TL | 29 | | 67 | | 21 | 391 | 4 329 | | 4 196 | 34 | 5 | 99 | | 9 171 |
| 03 | PU | | | | | 1 108 | 774 | 1 266 | 481 | 230 | | | | | 3 859 |
| Québec | PR | 1 447 | | 81 | | 2 536 | 3 819 | 1 491 | 3 540 | 354 | 48 | 210 | 27 | 6 | 13 559 |
| | TL | 1 447 | | 81 | | 3 664 | 4 593 | 2 757 | 4 021 | 584 | 48 | 210 | 27 | 6 | 17 418 |
| 04 | PU | | | 6 | | 518 | | 3 074 | | 3 045 | | | | | 6 643 |
| Trois-Rivières | PR | 469 | 31 | 74 | 5 | 796 | 820 | 129 | | 2 017 | 535 | 60 | | 14 | 4 950 |
| | TL | 469 | 31 | 80 | 5 | 1 314 | 820 | 3 203 | | 5 062 | 535 | 60 | | 14 | 11 593 |
| 05 | PU | | | | | 362 | | | | | | | | | 362 |
| Estrie | PR | 3 237 | | 212 | | 1 725 | 2 124 | | 278 | | 297 | 160 | 21 | 115 | 8 169 |
| | TL | 3 237 | | 212 | | 2 087 | 2 124 | | 278 | | 297 | 160 | 21 | 115 | 8 531 |
| 06 | PU | | | 5 | | 866 | 367 | 544 | | 1 520 | 8 | 75 | | 28 | 3 413 |
| Montréal | PR | 478 | 24 | 171 | | 414 | 543 | 77 | 63 | 366 | 669 | 193 | 1 | 263 | 3 262 |
| | TL | 478 | 24 | 176 | | 1 280 | 910 | 621 | 63 | 1 886 | 677 | 268 | 1 | 291 | 6 675 |
| 07 | PU | | | 65 | | 230 | 152 | 1 000 | | 1 838 | 477 | 755 | | 27 | 4 544 |
| Outaouais | PR | 70 | | 125 | | 258 | 349 | 175 | | 540 | 512 | 229 | | 65 | 2 323 |
| | TL | 70 | | 190 | | 488 | 501 | 1 175 | | 2 378 | 989 | 984 | | 92 | 6 867 |
| 08 | PU | | | 1 335 | | | | 94 | 1 957 | | 5 184 | 1 119 | 101 | | 9 790 |
| Abitibi — | PR | | | 236 | | | | 76 | 1 090 | | 2 464 | 184 | 13 | | 4 063 |
| Témiscamingue | TL | | | 1 571 | | | | 170 | 3 047 | | 7 648 | 1 303 | 114 | | 13 853 |
| 09 | PU | | | | | | | | 1 079 | | 31 | | | | 1 110 |
| Côte-Nord | PR | | | 12 | | 3 | 72 | 62 | | | 28 | | | | 177 |
| | TL | | | 12 | | 3 | 72 | 1 141 | | | 59 | | | | 1 287 |
| | PU | | | 1 457 | | 4 732 | 1 559 | 21 107 | 481 | 15 720 | 1 604 | 1 000 | | 55 | 47 715 |
| TOTAL | PR | 5 882 | 55 | 1 156 | 5 | 8 979 | 11 780 | 7 903 | 3 946 | 6 198 | 2 512 | 865 | 325 | 508 | 50 114 |
| | TL | 5 882 | 55 | 2 613 | 5 | 13 711 | 13 339 | 29 010 | 4 427 | 21 919 | 4 116 | 1 865 | 325 | 563 | 97 829 |



* PU Public forests PR Private forests TL Total

# 4 Forest Management

## 4.4 Reforestation (continued)

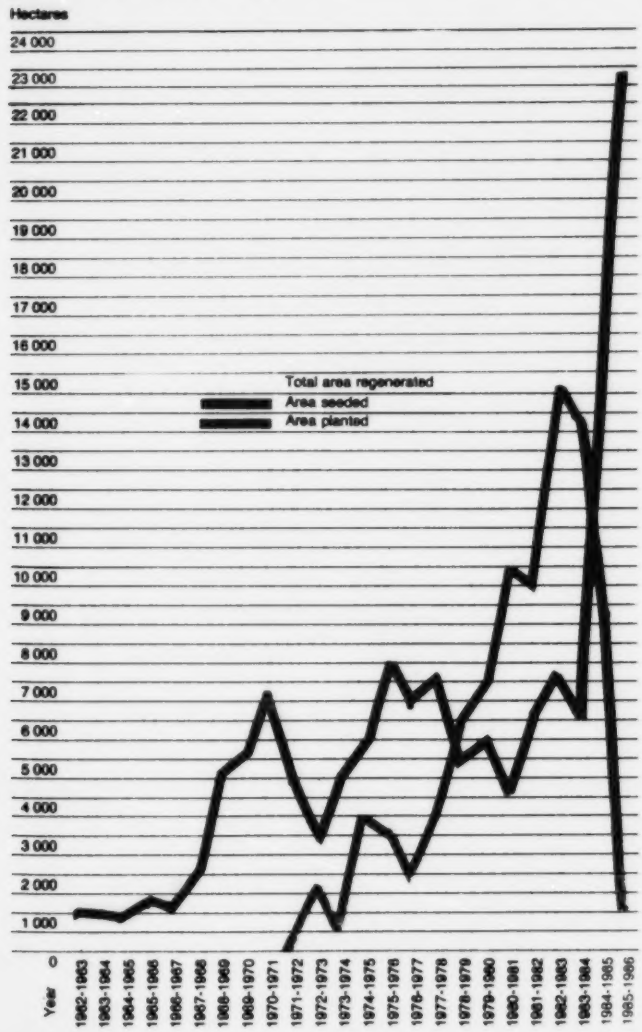
### Contribution of Joint Management Organizations to the Reforestation of Private Forests

| | 1982 | | 1983 | | 1984 | | 1985 | |
|---|---|---|---|---|---|---|---|---|
| | Total reforestation ('000 of seedlings) | Contribution of JMO* (%) | Total reforestation ('000 of seedlings) | Contribution of JMO* (%) | Total reforestation ('000 of seedlings) | Contribution of JMO* (%) | Total reforestation ('000 of seedlings) | Contribution of JMO* (%) |
| 01 Bas-Saint-Laurent — Gaspésie | 7 684 | 85 | 10 118 | 86 | 11 448 | 86 | 12 159 | 76 |
| 02 Saguenay — Lac-Saint-Jean | 1 587 | 67 | 2 132 | 61 | 1 927 | 69 | 1 452 | 63 |
| 03 Québec | 5 513 | 34 | 8 385 | 56 | 9 547 | 50 | 13 559 | 57 |
| 04 Trois-Rivières | 2 500 | 37 | 2 886 | 69 | 3 859 | 75 | 4 950 | 66 |
| 05 Estrie | 3 602 | 10 | 3 438 | 19 | 5 854 | 41 | 8 169 | 41 |
| 06 Montréal | 1 431 | 5 | 1 310 | 8 | 1 664 | 29 | 3 262 | 43 |
| 07 Outaouais | 1 771 | 40 | 1 963 | 49 | 2 284 | 54 | 2 323 | 44 |
| 08 Abitibi — Témiscamingue | 1 128 | 90 | 3 887 | 84 | 3 876 | 85 | 4 063 | 82 |
| 09 Côte-Nord | 53 | 0 | 87 | — | 89 | — | 177 | — |
| TOTAL | 25 270 | 50 | 34 206 | 63 | 40 548 | 65 | 50 114 | 61 |

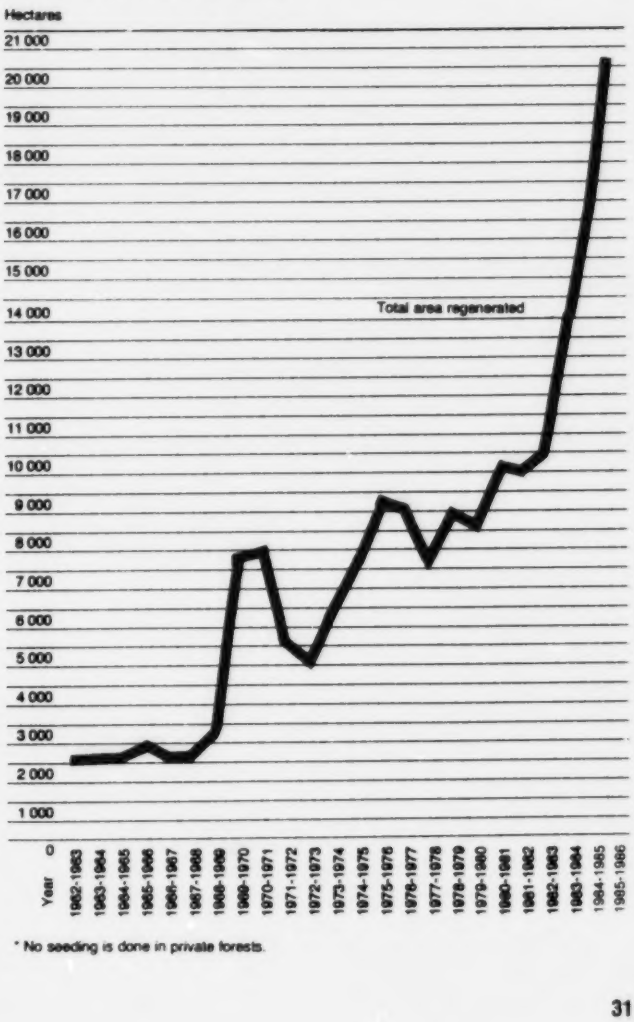
* JMO: Joint management organization

### Areas Artificially Regenerated

#### *(A) In Public Forests*




#### *(B) In Private Forests**



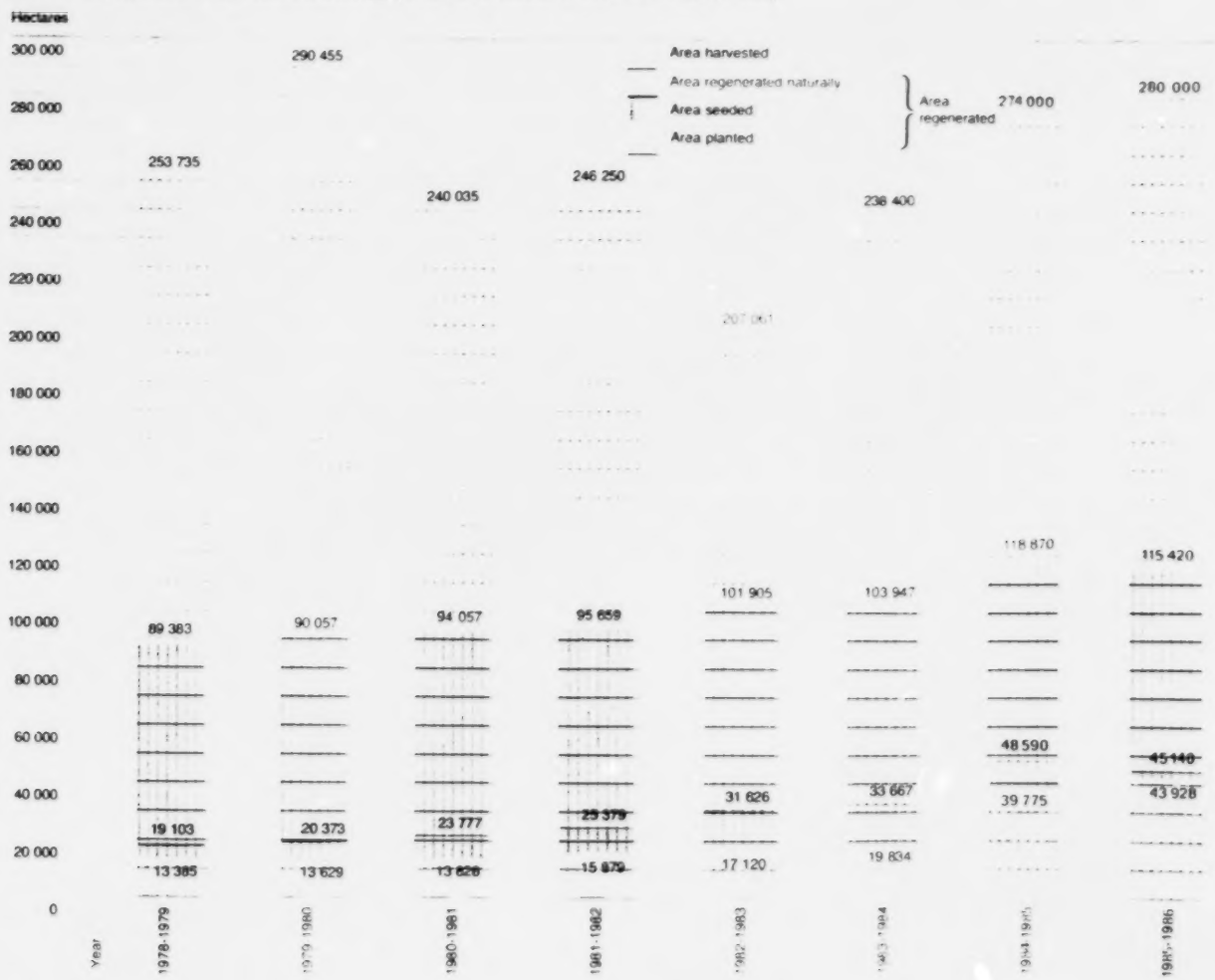

* No seeding is done in private forests.

# 4.4 Reforestation (continued)

## Related Silvicultural Operations *(hectares)*

| | PUBLIC FORESTS | | | PRIVATE FORESTS | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|
| | Site preparation | Plantation upkeep | Subtotal | Site preparation | Plantation upkeep | Subtotal | Site preparation | Plantation upkeep | Subtotal |
| **1981** | 6 726 | 2 328 | 9 054 | 1 967 | 1 504 | 3 471 | 8 693 | 3 832 | 12 525 |
| **1982** | 12 756 | 2 678 | 15 434 | 6 006 | 2 632 | 8 638 | 18 762 | 5 310 | 24 072 |
| **1983** | 15 804 | 3 587 | 19 391 | 4 560 | 3 814 | 8 374 | 20 364 | 7 401 | 27 765 |
| **1984** | 25 785 | 5 913 | 31 698 | 3 439 | 6 273 | 9 712 | 29 224 | 12 186 | 41 410 |
| **1985** | 45 896 | 5 668 | 51 564 | 6 494 | 6 074 | 12 568 | 52 390 | 11 742 | 64 132 |
| **Average** | **21 393** | **4 035** | **25 428** | **4 493** | **4 059** | **8 552** | **25 886** | **8 094** | **33 980** |

## Reforestation vs Harvesting *(Public and Private Forests)*



# 4.5 Other Forest Management Activities

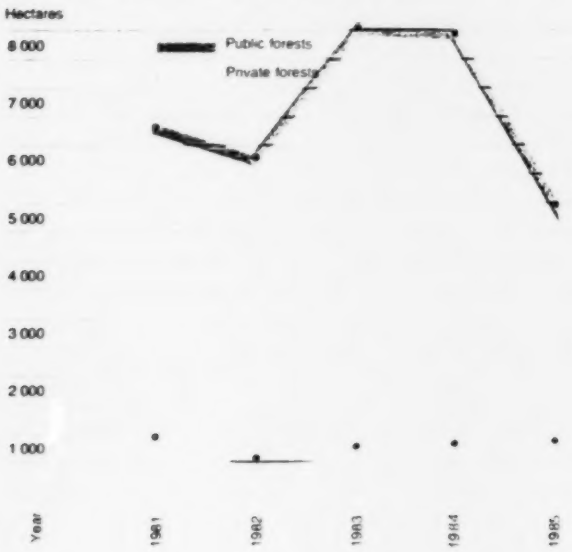
## Noncommercial Treatments *(hectares)*

| | PUBLIC FORESTS | | | PRIVATE FORESTS | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|
| | Thinning | Cleaning | Subtotal | Thinning | Cleaning | Subtotal | Thinning | Cleaning | Subtotal |
| **1981** | — | — | 6 394 | 182 | 852 | 1 034 | 182* | 852* | 7 428 |
| **1982** | 2 942 | 2 883 | 5 825 | 212 | 409 | 621 | 3 154 | 3 292 | 6 446 |
| **1983** | 1 973 | 6 039 | 8 012 | 195 | 392 | 587 | 2 168 | 6 431 | 8 599 |
| **1984** | 2 831 | 5 081 | 7 912 | — | — | 794 | 2 831** | 5 081** | 8 706 |
| **1985** | 451 | 4 527 | 4 978 | — | — | 823 | 451** | 4 527** | 5 801 |
| **Average** | **2 049** | **4 633** | **6 624** | **196** | **551** | **772** | **2 245** | **5 184** | **7 396** |

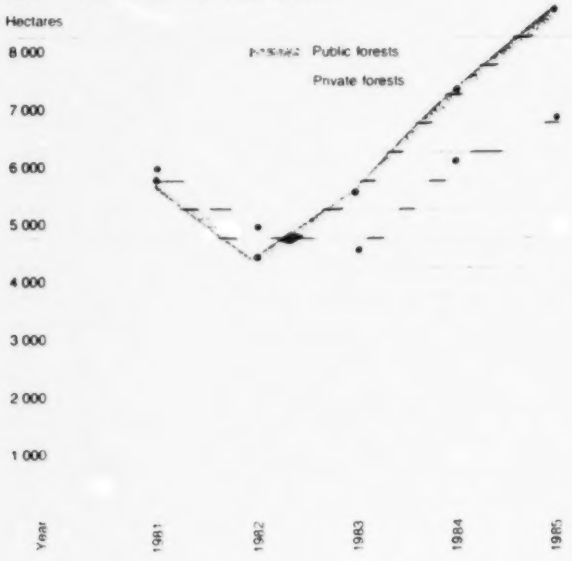
* Private forests only

** Public forests only

## Noncommercial Treatments




## Commercial Treatments




## Commercial Treatments *(hectares)**

| | PUBLIC FORESTS | | | PRIVATE FORESTS | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|
| | Strip Cutting | Other Treatments | Subtotal | Strip Cutting | Other Treatments | Subtotal | Strip Cutting | Other Treatments | Subtotal |
| **1981** | 5 000 | 699 | 5 699 | 31 | 5 621 | 5 652 | 5 031 | 6 320 | 11 351 |
| **1982** | 4 400 | 334 | 4 734 | 40 | 4 203 | 4 243 | 4 440 | 4 537 | 8 977 |
| **1983** | 3 716 | 591 | 4 307 | 24 | 2 040 | 2 064 | 3 740 | 2 631 | 6 371 |
| **1984** | 4 490 | 2 625 | 7 115 | 30 | 5 770 | 5 800 | 4 520 | 8 395 | 12 915 |
| **1985** | 4 080 | 4 731 | 8 811 | 42 | 6 623 | 6 665 | 4 122 | 11 354 | 15 476 |
| **Average** | **4 337** | **1 796** | **6 133** | **34** | **4 851** | **4 885** | **4 371** | **6 647** | **11 018** |

* Excluding clear cutting and salvage cutting

# 5 Logging

## 5.1 Economic Indicators

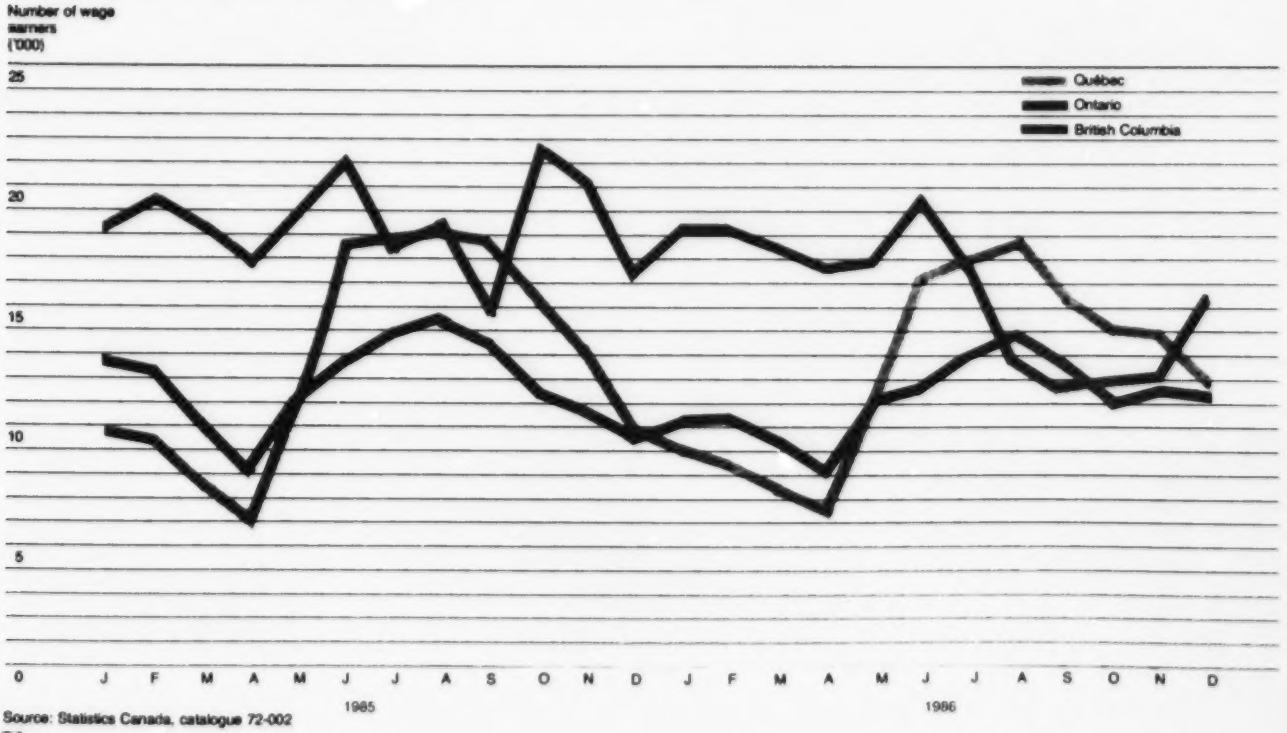
### Evolution of the Economic Indicators for Logging

| | Total number of employees* | Wages '000 $ | Value of shipments '000 $ | Value added '000 $ |
|---|---|---|---|---|
| 1970 | 14 815 | 109 057 | 329 026 | 161 069 |
| 1975 | 17 288 | 207 430 | 475 720 | 308 411 |
| 1980 | 11 575 | 221 552 | 695 183 | 347 611 |
| 1981 | 11 257 | 253 810 | 841 651 | 398 417 |
| 1982 | 8 994 | 204 828 | 777 350 | 317 817 |
| 1983 | 9 881 | 230 564 | 850 412 | 356 771 |
| 1984 | 10 729 | 243 245 | 937 232 | 407 101 |

* These figures cover all employees whereas other statistics include only production workers.

Source: Statistics Canada, catalogue 25-201

### Employment Curve in the Logging Industry *(January 1985 to December 1986)*




Source: Statistics Canada, catalogue 72-002

# 5 Logging

## 5.2 Productivity

### Employment vs Volumes of Wood Harvested

| | Employment Distribution % | Harvest Distribution % | % |
|---|---|---|---|
| | 1984-1986* | 1984-1985 | 1985-1986 |
| 01 Bas-Saint-Laurent — Gaspésie | 24 | 16 | 17 |
| 02 Saguenay — Lac-Saint-Jean | 22 | 25 | 22 |
| 03 Québec | 10 | 11 | 12 |
| 04 Trois-Rivières | 8 | 8 | 7 |
| 05 Estrie | 2 | 3 | 2 |
| 06 Montréal | 2 | 5 | 6 |
| 07 Outaouais | 7 | 8 | 7 |
| 08 Abitibi — Témiscamingue | 11 | 17 | 20 |
| 09 Côte-Nord | 14 | 7 | 7 |
| **TOTAL** | **100** | **100** | **100** |

* Estimate

Source: Emploi, rémunération et heures de travail au Québec (BSQ)

### Yield *(in m³)* in Relation to the Number of Hours Worked *(production only)*

| | Quebec | | British Columbia | | Ontario | | New Brunswick | |
|---|---|---|---|---|---|---|---|---|
| | m³/h | (%)* | m³/h | (%)* | m³/h | (%)* | m³/h | (%)* |
| 1980 | 1.03 | (100) | 1.32 | (100) | 1.00 | (100) | 1.18 | (100) |
| 1981 | 1.21 | (117) | 1.46 | (111) | 1.13 | (113) | 1.40 | (119) |
| 1982 | 1.31 | (127) | 1.42 | (108) | 1.39 | (139) | 1.21 | (103) |
| 1983 | 1.12 | (109) | 1.25 | ( 45) | 1.26 | (126) | 1.20 | (102) |
| 1984 | 1.05 | (102) | 1.17 | ( 89) | 1.06 | (106) | 1.15 | ( 97) |

* Index 1980 = 100%

Source: Statistics Canada, catalogue 25-201

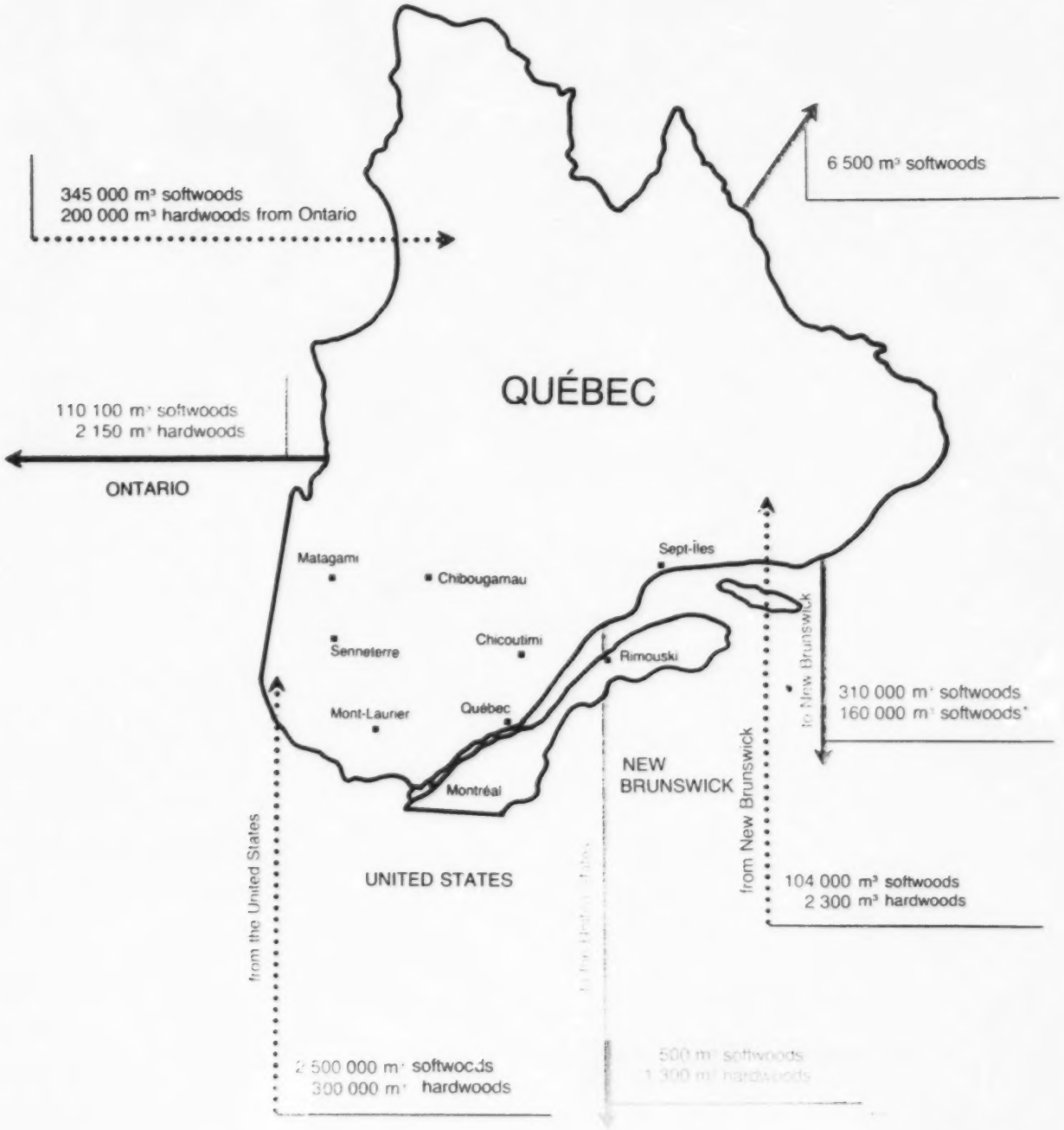
### Value Added in Relation to the Number of Hours Worked *(in current dollars)*

| | Quebec | British Columbia (Coast and Interior) | Ontario | New Brunswick |
|---|---|---|---|---|
| | v.a. / h = $/h | v.a. / h = $/h | v.a. / h = $/h | v.a. / h = $/h |
| 1980 | 343 465 / 18 882 = **18.1** | 1 015 953/ / 40 123 = **25.3** | 316 822 / 16 692 = **18.9** | 112 187/ / 7 220 = **15.5** |
| 1981 | 391 568 / 18 223 = **21.4** | 861 538/ / 31 203 = **27.6** | 319 182 / 14 979 = **21.3** | 113 199/ / 6 292 = **17.9** |
| 1982 | 311 122 / 13 413 = **23.2** | 785 255/ / 25 795 = **30.4** | 283 984 / 11 370 = **25.0** | 82 562/ / 4 928 = **16.8** |
| 1983 | 349 914 / 16 055 = **21.8** | 1 138 736/ / 38 010 = **30.0** | 348 408 / 13 468 = **25.9** | 127 631/ / 6 206 = **20.6** |
| 1984 | 397 501 / 17 117 = **23.2** | 1 057 975/ / 39 779 = **26.6** | 391 493 / 17 283 = **22.7** | 171 680/ / 7 781 = **22.1** |

Source: Statistics Canada, catalogue 25-201

# 6 Movement of Roundwood and Chips

## 6.1 Imports and Exports in 1985 and 1986




* Wood fiber in transit: roundwood imported and sawn in Quebec before being exported, or chips produced from imported roundwood and being exported.

# 6.2 Joint Products Used by the Industry

## A) Chips *(Softwood and Hardwood)*

| Region | Evolution in Sawmill Production (%) | | | | | Evolution in Paper Mill Consumption (%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1980 | 1981 | 1982 | 1983 | 1984 | 1980 | 1981 | 1982 | 1983 | 1984 |
| 01 — Bas-Saint-Laurent—Gaspésie | 9 | 8 | 8 | 8 | 8 | 6 | 5 | 7 | 5 | 6 |
| 02 — Saguenay—Lac-Saint-Jean | 29 | 33 | 32 | 34 | 33 | 24 | 27 | 28 | 26 | 24 |
| 03 — Québec | 10 | 9 | 8 | 11 | 12 | 10 | 11 | 10 | 11 | 12 |
| 04 — Trois-Rivières | 3 | 3 | 3 | 4 | 4 | 24 | 24 | 22 | 21 | 25 |
| 05 — Estrie | 2 | 3 | 2 | 3 | 6 | 4 | 4 | 4 | 5 | 6 |
| 06 — Montréal | — | 2 | 3 | 3 | 3 | — | — | — | — | — |
| 07 — Outaouais | 3 | 2 | 2 | 2 | 1 | 9 | 8 | 9 | 10 | 10 |
| 08 — Abitibi—Témiscamingue | 37 | 36 | 37 | 35 | 29 | 20 | 17 | 19 | 20 | 13 |
| 09 — Côte-Nord | 7 | 4 | 5 | — | 4 | 3 | 4 | 1 | 2 | 4 |
| **TOTAL** | **100** | **100** | **100** | **100** | **100** | **100** | **100** | **100** | **100** | **100** |

Source: Compilations based on mill permit renewal applications

## B) Roundwood *(Softwood and Hardwood m³)*

| | Private Forests | | | Public Forests | | | Total | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Pulpwood | Sawlogs | Other | Pulpwood | Sawlogs | Other | Pulpwood | Sawlogs | Other | Total |
| 01 — Bas-Saint-Laurent—Gaspésie | 1 103 300 | 478 860 | 596 465 | 824 709 | 1 958 654 | 67 525 | 1 928 009 | 2 437 514 | 663 990 | 5 029 513 |
| 02 — Saguenay—Lac-Saint-Jean | 188 400 | — | 86 840 | 1 798 854 | 5 500 844 | 87 606 | 1 987 254 | 5 500 844 | 174 446 | 7 662 544 |
| 03 — Québec | 1 200 705 | 126 800 | 852 580 | 556 796 | 772 123 | 47 666 | 1 757 501 | 898 923 | 900 246 | 3 556 670 |
| 04 — Trois-Rivières | 309 915 | — | 99 910 | 1 265 436 | 775 667 | 131 234 | 1 575 351 | 775 667 | 231 144 | 2 582 162 |
| 05 — Estrie | 451 300 | 87 000 | 264 060 | 28 456 | 26 421 | 1 125 | 479 756 | 113 421 | 265 185 | 858 362 |
| 06 — Montréal | 324 755 | 12 660 | 281 980 | 398 157 | 495 024 | 108 309 | 722 912 | 507 684 | 390 289 | 1 620 885 |
| 07 — Outaouais | 471 850 | 51 425 | 94 710 | 1 081 970 | 786 860 | 32 982 | 1 553 820 | 838 285 | 127 692 | 2 519 797 |
| 08 — Abitibi—Témiscamingue | 14 850 | 79 320 | 10 375 | 87 389 | 4 678 649 | 363 030 | 102 239 | 4 757 969 | 373 405 | 5 233 613 |
| 09 — Côte-Nord | 24 790 | — | 14 230 | 1 285 586 | 803 341 | 40 593 | 1 310 376 | 803 341 | 54 823 | 2 168 540 |
| **TOTAL** | **4 089 865** | **836 065** | **2 301 150** | **7 32 ` 353** | **15 797 583** | **880 070** | **11 417 218** | **16 633 648** | **3 181 220** | **31 232 086** |

# 7 The Wood Industry

## 7.1 Overview

### Wood Processing Mills *(January 1987)*

| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **Lumber** | **208** | **103** | **262** | **101** | **112** | **191** | **95** | **79** | **40** | **1 191** |
| On a service basis | 108 | 49 | 111 | 58 | 52 | 76 | 51 | 37 | 18 | 560 |
| On a commercial basis | 100 | 54 | 151 | 43 | 60 | 115 | 44 | 42 | 22 | 631 |
| — Less than 2 000 m³/year | 59 | 20 | 87 | 29 | 38 | 80 | 34 | 21 | 19 | 387 |
| — Between 2 000 and 10 000 m³/year | 15 | 12 | 35 | 9 | 13 | 29 | 3 | 2 | — | 118 |
| — Between 10 000 and 20 000 m³/year | 6 | 4 | 6 | 2 | 4 | 6 | 2 | 1 | — | 31 |
| — Between 20 000 and 50 000 m³/year | 10 | 6 | 12 | — | 3 | — | 3 | 2 | 1 | 37 |
| — More than 50 000 m³/year | 10 | 12 | 11 | 3 | 2 | — | 2 | 16 | 2 | 58 |
| **Chips** | **37** | **35** | **61** | **20** | **23** | **44** | **12** | **29** | **3** | **264** |
| Main production | 1 | 1 | 3 | 4 | 3 | 2 | 1 | 2 | — | 17 |
| Secondary production | 36 | 34 | 58 | 16 | 20 | 42 | 11 | 27 | 3 | 247 |
| **Laths** | **24** | **—** | **3** | **—** | **3** | **—** | **—** | **2** | **1** | **33** |
| Main production | 7 | — | — | — | — | — | — | — | — | 7 |
| Secondary production | 17 | — | 3 | — | 3 | — | — | 2 | 1 | 26 |
| **Shingles**[1,2] | **17** | **2** | **23** | **3** | **9** | **10** | **1** | **3** | **—** | **68** |
| Main production | 10 | 1 | 15 | 3 | 5 | 5 | — | 2 | — | 41 |
| Secondary production | 7 | 1 | 8 | — | 4 | 5 | 1 | 1 | — | 27 |
| **Veeners and Plywood**[1,2] | **—** | **—** | **4** | **14** | **2** | **7** | **3** | **3** | **—** | **33** |
| Peeling, slicing | — | — | 3 | 13 | 2 | 5 | 3 | 3 | — | 29 |
| Assembling and wood veneer only | — | — | 1 | 1 | — | 2 | — | — | — | 4 |
| **Sash, Doors and other Millwork**[1] | **44** | **36** | **145** | **69** | **34** | **230** | **20** | **11** | **3** | **592** |
| **Hardwood Flooring**[1] | **1** | **1** | **6** | **1** | **2** | **1** | **—** | **—** | **—** | **12** |
| **Prefabricated Buildings** (frames)[1] | **2** | **6** | **23** | **5** | **1** | **31** | **7** | **3** | **—** | **78** |
| **Wooden Kitchen Cabinets**[1] | **6** | **10** | **28** | **19** | **6** | **73** | **3** | **1** | **2** | **148** |
| **Furniture and Furnishings**[1] | **1** | **1** | **6** | **3** | **—** | **14** | **1** | **—** | **1** | **27** |
| **Coffins and Caskets**[1] | **—** | **—** | **4** | **8** | **1** | **2** | **—** | **—** | **—** | **15** |
| **Treated Wood**[1] | **—** | **—** | **1** | **—** | **—** | **1** | **—** | **2** | **—** | **4** |
| **Wooden Handles and Turnery Wood**[1] | **—** | **1** | **8** | **4** | **1** | **5** | **—** | **—** | **—** | **19** |
| **Particle Boards**[1,3] | **1** | **—** | **2** | **2** | **—** | **5** | **2** | **3** | **—** | **15** |
| **Posts** | **—** | **1** | **2** | **—** | **—** | **1** | **1** | **1** | **—** | **6** |
| **Spoolwood** | **—** | **—** | **5** | **—** | **5** | **2** | **—** | **—** | **—** | **12** |
| Main production | — | — | 1 | — | — | 1 | — | — | — | 2 |
| Secondary production | — | — | 4 | — | 5 | 1 | — | — | — | 10 |
| **Charcoal** | **3** | **—** | **40** | **—** | **—** | **1** | **—** | **1** | **—** | **45** |
| Integrated mills (including drying) | 2 | — | 3 | — | — | — | — | 1 | — | 6 |
| Kilns only | 1 | — | 37 | — | — | 1 | — | — | — | 39 |
| **Essential Oils** | **1** | **1** | **7** | **—** | **5** | **1** | **—** | **1** | **—** | **16** |
| **Firewood** (more than 500 m³/year) | **13** | **1** | **19** | **23** | **2** | **45** | **26** | **2** | **1** | **132** |
| Main production | 12 | — | 12 | 20 | 1 | 42 | 23 | 1 | 1 | 112 |
| Secondary production | 1 | 1 | 7 | 3 | 1 | 3 | 3 | 1 | — | 20 |
| **Secondary Processing**[1] (Sawmill and planing mill products) | **3** | **6** | **22** | **8** | **6** | **15** | **4** | **2** | **—** | **66** |
| **Total Production Units**[3] | **361** | **204** | **671** | **280** | **212** | **679** | **175** | **143** | **51** | **2 776** |
| **%** | **13** | **7** | **24** | **10** | **8** | **25** | **6** | **5** | **2** | **100** |
| **Actual Number of Mills** | **299** | **169** | **554** | **261** | **179** | **627** | **160** | **112** | **47** | **2 408** |
| **%** | **12** | **7** | **23** | **11** | **7** | **26** | **7** | **5** | **2** | **100** |

(1) Data from the Centre de recherche industrielle du Québec (CRIQ)

(2) MER compilation

(3) Mills producing more than one category of products are included in each of these categories

Sources: MER and CRIQ

# 7.1 Overview (continued)

## Economic Indicators by Industry or Major Group of Industries *(Wood Industry, Group 25)*

| | Total Number of Employees | | | Total Salaries and Wages ('000 $) | | | Value of Shipments ('000 $) | | | Value Added ('000 $) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1982 | 1983 | 1984 | 1982 | 1983 | 1984 | 1982 | 1983 | 1984 | 1982 | 1983 | 1984 |
| **Shingle and split shake mills (2511)** | 210 | 237 | 225 | 3 062 | 3 395 | 3 606 | 7 905 | 8 341 | 10 206 | 4 108 | 4 881 | 5 964 |
| **Sawmills and planing mills (2512)** | 12 411 | 14 873 | 15 549 | 221 394 | 282 011 | 310 622 | 892 921 | 1 194 047 | 1 358 096 | 354 166 | 505 632 | 576 105 |
| **Veneer and plywood mills (2520)** | 1 762 | 1 796 | 1 769 | 26 680 | 32 690 | 34 350 | 134 108 | 203 726 | 215 691 | 49 165 | 62 542 | 60 135 |
| Prefabricated buildings (2541) | 624 | 652 | 638 | 9 837 | 10 106 | 10 888 | 42 287* | 57 305 | 66 473 | 16 053 | 21 344 | 25 839 |
| **Kitchen cabinets (2542)** | 1 596 | 2 161 | 2 220 | 23 856 | 33 445 | 36 873 | 77 302* | 110 716 | 136 966 | 36 452 | 52 817 | 66 666 |
| **Wooden doors and windows (2543)** | 2 476 | 2 876 | 3 114 | 37 048 | 50 875 | 57 795 | 143 589* | 219 906 | 258 637 | 60 336 | 91 769 | 106 930 |
| Miscellaneous millwork (2549) | 1 489 | 1 638 | 1 620 | 23 802 | 27 101 | 29 535 | 82 098* | 116 814 | 121 078 | 40 233 | 53 361 | 60 779 |
| Wooden boxes and pallet factories (2561) | 779 | 708 | 839 | 10 998 | 10 147 | 13 527 | 38 254 | 36 286 | 50 806 | 17 142 | 15 954 | 23 030 |
| Coffins and caskets industry (2581) | 466 | 495 | 452 | 7 714 | 8 709 | 7 717 | 23 748 | 26 157 | 24 402 | 12 771 | 14 365 | 12 460 |
| Particle board industry (2592) | 426 | 353 | 661 | 9 738 | 8 727 | 18 042 | 48 712 | 43 386 | 88 791 | 17 406 | 16 185 | 48 209 |
| Miscellaneous wood industries (2590, except for 2592) | 1 354 | 1 578 | 1 516 | 19 407 | 26 590 | 28 083 | 75 403 | 119 156 | 143 350 | 33 994 | 47 964 | 59 305 |
| **TOTAL** | **23 593** | **27 367** | **28 603** | **393 536** | **493 796** | **551 038** | **1 566 327** | **2 135 840** | **2 474 496** | **641 826** | **886 814** | **1 045 422** |

* Value of shipments of goods of own manufacture. The value of total shipments is not available for 1982.

Source: Statistics Canada, catalogue 31-203

## Capital and Repair Expenditures *(Wood Industry, Group 25)* *($ millions)*

| YEAR | Quebec | | | Canada | | |
|---|---|---|---|---|---|---|
| | Capital Expenditures | Repairs | Total | Capital Expenditures | Repairs | Total |
| 1975 | 61.2 | 14.9 | 76.1 | 266.4 | 142.5 | 408.9 |
| 1980 | 68.5 | 40.1 | 108.6 | 469.0 | 327.1 | 796.1 |
| 1981 | 61.1 | 26.6 | 87.7 | 447.8 | 296.7 | 744.5 |
| 1982 | 125.0 | 25.6 | 150.6 | 320.3 | 266.1 | 586.4 |
| 1983 | 83.1 | 36.9 | 120.0 | 288.8 | 332.0 | 620.8 |
| 1984 | 62.9 | 52.3 | 115.2 | 334.1 | 366.6 | 700.7 |
| 1985 | 99.6 | 51.4 | 151.0 | 327.2 | 396.7 | 723.9 |
| 1986(p) | 77.5 | 50.1 | 127.6 | 430.5 | 360.1 | 790.6 |
| 1987(e) | 69.2 | 50.3 | 119.5 | 544.7 | 408.3 | 953.0 |

(e) Estimate

(p) Preliminary

Source: Investissements privés et publics (BSQ)

## Productivity of the Wood Industry

| | 1980 | 1981 | 1982 | 1983 | 1984 |
|---|---|---|---|---|---|
| Productivity of the wood industry (Group 25) | 14 110 | 16 567 | 15 980 | 18 916 | 21 157 |
| Productivity of overall manufacturing industry | 22 825 | 25 604 | 26 460 | 29 180 | 32 560 |
| Relation between sectoral productivity and overall manufacturing productivity | 0 618 | 0 647 | 0 604 | 0 648 | 0 650 |

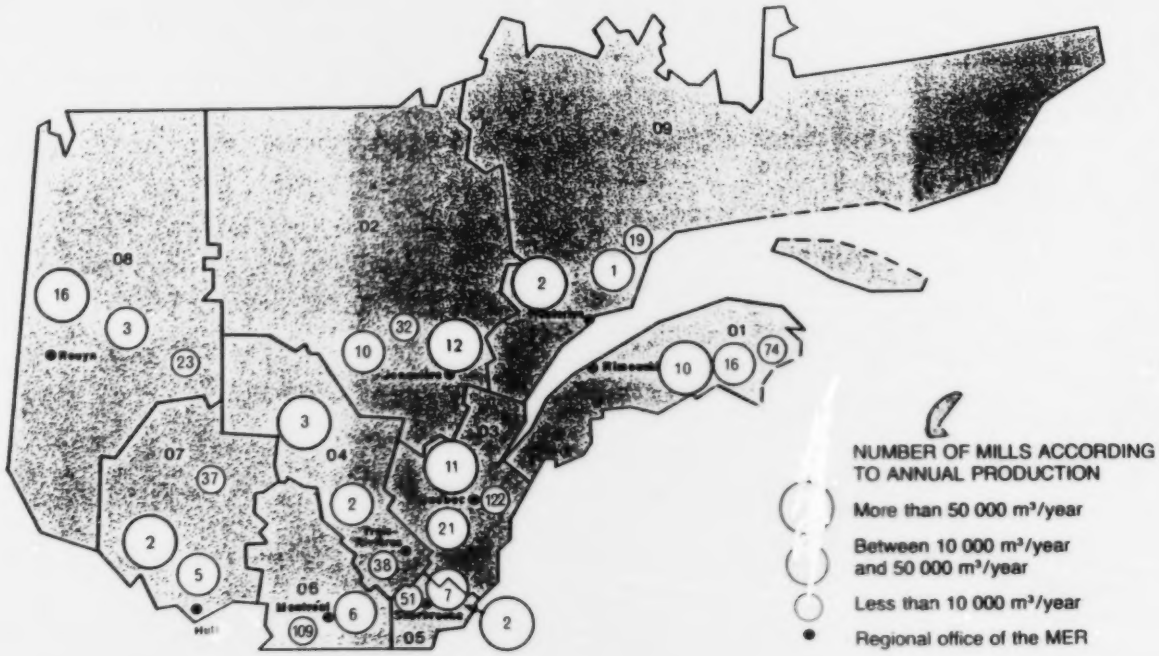
Productivity = Value added to manufacturing goods / Number of person-hours (in current dollars)

Source: Statistics Canada, catalogue 31-203

# 7

## 7.2 The Sawmill Industry

### Sawmills Operating on a Commercial Basis




### Sources of Wood Used in Sawmills *('000 m³)*

| Source | 1970 | 1975 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
|---|---|---|---|---|---|---|---|---|
| Public forests | 5 817 | 10 129 | 14 641 | 15 271 | 13 024 | 16 232 | 15 798 | 16 463 |
| Private forests | 1 266(e) | 923(e) | 1 519 | 1 584 | 1 879 | 2 365 | 836 | 874 |
| Imports | 2 510 | 2 464 | 3 029 | 2 400(e) | 2 400(e) | 2 400(e) | 2 400(e) | 2 400(e) |
| **TOTAL** | **9 593** | **13 156** | **19 189** | **19 255** | **17 303** | **20 997** | **19 034** | **19 737** |

(e) Estimated data

Sources: Statistics Canada, catalogue 65-203 and MER (internal compilation)

### Lumber Shipments *('000 m³)*

| Species | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986(e) |
|---|---|---|---|---|---|---|---|
| Softwoods | 6 960 | 6 857 | 6 394 | 8 105 | 8 380 | 9 309 | 10 400 |
| Hardwoods | 578 | 467 | 421 | 381 | 437 | 449 | 400 |
| **TOTAL** | **7 538** | **7 314** | **6 815** | **8 486** | **8 817** | **9 758** | **10 800** |

(e) Estimated data

Sources: Statistics Canada, catalogue 35-002 and MER compilation

### Shingles Shipments *(toises*)*

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985(e) |
|---|---|---|---|---|---|---|
| Shingles | 312 425 | 298 798 | 300 866 | 333 529 | 394 646 | 450 162 |

* 1 toise = 9.3 m²

(e) Estimated data

Source: Association des manufacturiers de bois de sciage du Québec (AMBSQ)

# 7.2 The Sawmill Industry (continued)

## Shipments of Related Products *(oven-dry metric tonnes)*

| | 1982 | 1983 | 1984(e) | 1985(e) |
|---|---|---|---|---|
| Chips | 3 106 585 | 3 774 231 | 3 912 002 | 4 150 000 |
| Sawdust and shavings | 912 675 | 998 895 | 1 006 566 | 800 000 |
| Bark | 967 509 | 1 154 200 | 1 288 910 | 1 100 000 |
| **TOTAL** | **4 986 769** | **5 927 326** | **6 207 478** | **6 050 000** |

(e) Estimate

Source: Association des manufacturiers de bois de sciage du Québec (AMBSQ)

## Destination of Québec's Softwood Lumber Shipments (%)

| | 1980 | 1983 | 1984 | 1985(e) |
|---|---|---|---|---|
| **Québec** | 15 | 16 | 18 | 20 |
| **Ontario** | 19 | 18 | 22 | 24 |
| **United States** | | | | |
| • **Northeast** | 30 | 23 | 21 | 26 |
| • **North Central** | 20 | 22 | 20 | 23 |
| • **South** | 4 | 13 | 12 | 2 |
| **Overseas** | 12 | 8 | 7 | 5 |
| **TOTAL** | **100** | **100** | **100** | **100** |

(e) Estimate

Source: Association des manufacturiers de bois de sciage du Québec (AMBSQ)

## Conversion Ratio *(lumber/wood fiber)* and Productivity

| | Quebec | | Ontario | | British Columbia | | Canada | |
|---|---|---|---|---|---|---|---|---|
| | Ratio % | Productivity ($m^3$/h worked) | Ratio % | Productivity ($m^3$/h worked) | Ratio % | Productivity ($m^3$/h worked) | Ratio % | Productivity ($m^3$/h worked) |
| 1970 | 37.0 | 0.19 | 33.3 | 0.17 | 38.3 | 0.38 | 37.7 | 0.29 |
| 1975 | 40.3 | 0.23 | 35.9 | 0.19 | 43.1 | 0.39 | 42.0 | 0.31 |
| 1980 | 36.5 | 0.25 | 29.7 | 0.24 | 41.6 | 0.41 | 38.7 | 0.33 |
| 1981 | 39.3 | 0.27 | 34.8 | 0.28 | 43.1 | 0.46 | 41,2 | 0.37 |
| 1982 | 41.7 | 0.29 | 35.8 | 0.29 | 42.8 | 0.51 | 41.4 | 0.41 |
| 1983 | 38.4 | 0.31 | 35.3 | 0.31 | 43.3 | 0.58 | 41.0 | 0.46 |
| 1984 | 39.5 | 0.32 | 46.9 | 0.34 | 45.4 | 0.61 | 44.3 | 0.47 |

Sources: Statistics Canada, catalogue 35-204
L'industrie du bois de sciage au Québec (DEI, DGRP, MICT), 1981

## Comparative Evolution of Chips and Lumber Shipments

| | Quebec | | | Canada | | |
|---|---|---|---|---|---|---|
| | Lumber(1) nominal '000 $m^3$ | Chips(1) '000 omt(2) | Chips/Lumber omt $m^3$ | Lumber nominal '000 $m^3$ | Chips '000 omt | Chips/Lumber omt $m^3$ |
| 1970 | 3 518 | 994 | 0.283 | 25 861 | 6 483 | 0.251 |
| 1975 | 4 717 | 1 830 | 0.388 | 25 917 | 8 801 | 0.340 |
| 1980 | 7 383 | 3 643 | 0.493 | 40 348 | 15 899 | 0.394 |
| 1981 | 7 245 | 3 530 | 0.487 | 39 180 | 14 216 | 0.363 |
| 1982 | 6 162 | 3 107 | 0.504 | 35 079 | 12 829 | 0.366 |
| 1983 | 7 963 | 3 424 | 0.430 | 44 772 | 14 962 | 0.334 |
| 1984 | 8 414 | 3 766 | 0.448 | 46 802 | 15 071 | 0.322 |

(1) Chips and lumber shipments by sawmills
(2) Oven dry metric tonnes
Source: Statistics Canada, catalogue 35-204

## 7.2 The Sawmill Industry (continued)

### Evolution of Average Gross Volume per Stem of Softwood Harvested in Public Forests *(Spruce, Balsam Fir and Jack Pine)*

| | 1978-1979 $dm^3$ | 1979-1980 $dm^3$ | 1980-1981 $dm^3$ | 1981-1982 $dm^3$ | 1982-1983 $dm^3$ | 1983-1984 $dm^3$ | 1984-1985 $dm^3$ | 1985-1986 $dm^3$ |
|---|---|---|---|---|---|---|---|---|
| 01 Bas-Saint-Laurent—Gaspesie | 165 | 143 | 136 | 148 | 162 | 159 | 144 | 155 |
| 02 Saguenay—Lac Saint-Jean | 159 | 151 | 145 | 148 | 146 | 142 | 136 | 145 |
| 03 Québec | 151 | 145 | 141 | 139 | 132 | 161 | 146 | 144 |
| 04 Trois-Rivières | 190 | 203 | 205 | 169 | 193 | 167 | 176 | 185 |
| 05 Estrie | — | — | — | — | — | — | — | — |
| 06 Montréal | 241 | 257 | 129 | 211 | 185 | 184 | 176 | 198 |
| 07 Outaouais | 203 | 211 | 160 | 157 | 232 | 157 | 278 | 273 |
| 08 Abitibi—Témiscamingue | 169 | 161 | 154 | 147 | 145 | 140 | 133 | 133 |
| 09 Côte-Nord | 199 | 188 | 195 | 194 | 192 | 147 | 174 | 189 |
| **Weighted Average** | **164** | **158** | **153** | **150** | **149** | **143** | **138** | **143** |

Note: These figures are taken from logging sites where wood is measured by length only, and therefore exclude wood measured in units or in mass volume.

7 The Wood Industry

## 7.3 Economic Indicators

### Evolution of the Economic Indicators for Sawmill and Planing Mill Products*

| | Total Number of Employees | Wages | Value of Shipments | Value Added |
|---|---|---|---|---|
| | | 000 $ | 000 $ | 000 $ |
| 1970 | 9 039 | 42 501 | 176 225 | 73 211 |
| 1975 | 11 371 | 102 965 | 377 785 | 180 023 |
| 1980 | 16 140 | 252 133 | 973 290 | 449 854 |
| 1981 | 15 477 | 257 470 | 1 003 660 | 433 614 |
| 1982 | 12 411 | 221 394 | 892 921 | 354 166 |
| 1983 | 14 873 | 282 011 | 1 194 047 | 505 632 |
| 1984 | 15 549 | 310 522 | 1 358 096 | 576 105 |

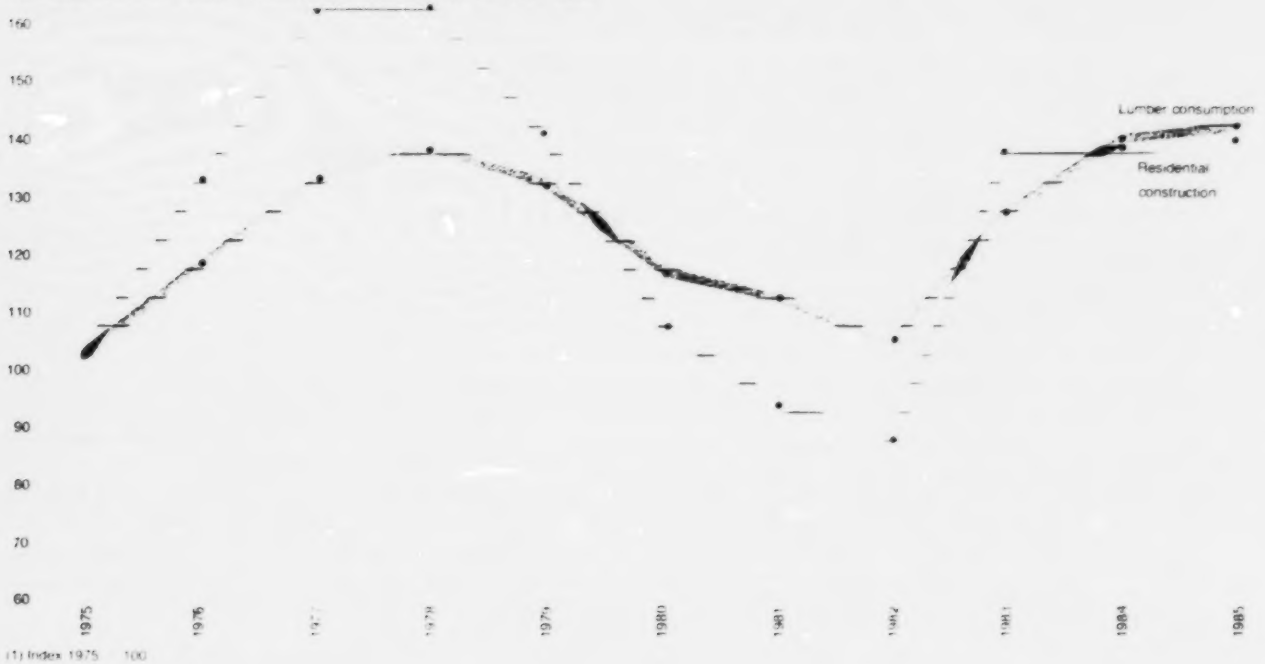
* Sawmills and planing mills represent only part of Group 251 – Wood industries.

Source: Statistics Canada, catalogue 31-203.

# 7

## 7.3 Economic Indicators (continued)

### Comparative Evolution of Lumber Consumption and Residential Construction in North America




(1) Index: 1975 = 100

### Profitability Ratio* *(Sawmills and Planing Mills)*

| | Quebec (%) | Ontario (%) | British Columbia (%) | Canada (%) |
|---|---|---|---|---|
| 1980 | 2.8 | 3.7 | 3.5 | 3.3 |
| 1981 | (1.0) | 1.3 | (1.0) | (0.8) |
| 1982 | (1.2) | (2.1) | (6.8) | (4.8) |
| 1983 | 3.6 | 3.2 | 1.6 | 1.9 |
| 1984 | 3.7 | 2.7 | 0.4 | 1.2(e) |
| **Average** | **1.7** | **1.4** | **0.7** | **0.4** |

* This ratio is calculated by dividing net profits by total revenues.

(e) Estimate

### Financial Returns Ratio* *(Sawmills and Planing Mills)*

| | Quebec (%) | Ontario (%) | British Columbia (%) | Canada (%) |
|---|---|---|---|---|
| 1980 | 14.2 | 18.2 | 15.0 | 15.1 |
| 1981 | 11.4 | 14.6 | 11.3 | 11.4 |
| 1982 | 12.4 | 11.4 | 6.6 | 8.4 |
| 1983 | 17.3 | 17.0 | 13.8 | 14.7 |
| 1984 | 16.0 | 12.5 | 11.5 | 12.9(e) |
| **Average** | **14.5** | **14.7** | **11.9** | **13.2** |

* This ratio is calculated by dividing gross profits by product sales.

(e) Estimate

# 7 The Wood Industry

## 7.4 The Veneer and Plywood Industry

### Working Capital Ratio* *(Sawmills and Planing Mills)*

| | Quebec (%) | Ontario (%) | British Columbia (%) | Canada (%) |
|---|---|---|---|---|
| 1980 | 1.4 | 1.4 | 1.5 | 1.5 |
| 1981 | 1.3 | 1.5 | 1.4 | 1.4 |
| 1982 | 1.4 | 1.5 | 1.3 | 1.4 |
| 1983 | 1.9 | 1.9 | 1.4 | 1.4 |
| 1984 | 1.7 | 1.4 | 1.3 | 1.4(e) |
| **Average** | **1.5** | **1.5** | **1.4** | **1.4** |

* This ratio is calculated by dividing short-term assets by short-term liabilities

(e) Estimate

### Financial Structure Ratio* *(Sawmills and Planing Mills)*

| | Québec Debt:Equity | Ontario Debt:Equity | British Columbia Debt:Equity | Canada Debt:Equity |
|---|---|---|---|---|
| 1980 | 31:69 | 24:76 | 45:55 | 40:60 |
| 1981 | 37:63 | 31:69 | 55:45 | 49:51 |
| 1982 | 45:55 | 30:70 | 59:61 | 53:47 |
| 1983 | 43:57 | 36:64 | 60:40 | 53:47 |
| 1984 | 39:61 | 43:57 | 61:39 | 55:45(e) |
| **Average** | **40:60** | **33:67** | **66:34** | **50:50** |

* This ratio is the proportion of long-term debts to equity

(e) Estimate

Note: The financial data contained in the four preceding tables are distributed according to the province in which the industry's head office is located

Source: Statistics Canada, catalogue 61-207

# 7 The Wood Industry

## 7.4 The Veneer and Plywood Industry

### Hardwood Veneer and Plywood* Shipments

| | Veneer | | | Plywood | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1982 | 1983 | 1984 | 1982 | 1983 | 1984 | 1982 | 1983 | 1984 |
| Québec ('000 m²) | 51 377 | 77 461 | 80 403 | 6 618 | 10 281 | 9 543 | 57 995 | 87 742 | 89 946 |
| Ontario ('000 m²) | 49 069 | 60 686 | 58 081 | 16 474 | 18 554 | 19 024 | 65 543 | 79 240 | 77 105 |
| Canada ('000 m²) | 101 076 | 138 931 | 139 258 | 25 593 | 31 557 | 30 965 | 126 669 | 170 488 | 170 223 |
| Québec/Canada (%) | 50.8 | 55.8 | 57.7 | 25.9 | 32.6 | 30.8 | 45.8 | 51.5 | 52.8 |
| Ontario/Canada (%) | 48.5 | 43.7 | 41.7 | 64.4 | 58.8 | 61.4 | 51.7 | 46.5 | 45.3 |

* With respect to boards, veneer and plywood, quantities are given in surface measurements (m²), for a standard thickness of 6 mm (¼ inch)

Sources: Statistics Canada, catalogues 35-206 and 31-211
Statistics Canada, special compilation by province

# 7

## 7.4 The Veneer and Plywood Industry (continued)

### Evolution of the Economic Indicators for the Veneer and Plywood Industry

| | Total number of employees | Total salaries and wages ( 000 $) | Value of shipments ( 000 $) | Value added ( 000 $) |
|---|---|---|---|---|
| 1970 | 2 362 | 11 335 | 51 115 | 17 762 |
| 1975 | 2 491 | 21 167 | 85 602 | 31 167 |
| 1980 | 1 991 | 27 736 | 142 253 | 53 832 |
| 1981 | 1 715 | 24 761 | 136 612 | 50 654 |
| 1982 | 1 762 | 26 680 | 134 108 | 49 165 |
| 1983 | 1 796 | 32 690 | 203 726 | 62 542 |
| 1984 | 1 769 | 34 350 | 215 691 | 60 135 |

Source: Statistics Canada, catalogue 31-203

# 7 The Wood Industry

## 7.5 Miscellaneous

### The Reconstituted Board Industry in 1986

| Products | Number of mills | Production capacity ($m^3$ year) | Total number of employees |
|---|---|---|---|
| Waferboard | 3 | 385 000 | 300 |
| Particle board | 3 | 545 000 | 700 |
| Low-density board | 3 | 450 000 | 460 |
| **Total** | **9** | **1 380 000** | **1 460** |

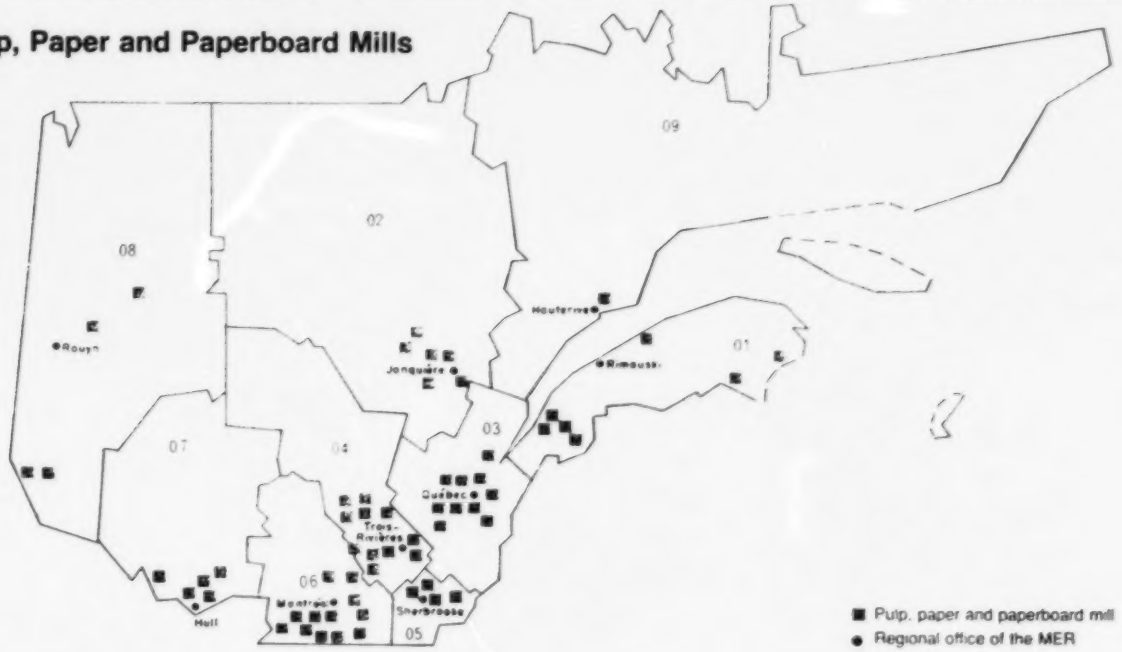
### The Charcoal Industry in 1985

| Number number of mills | Total number of employees | Production capacity (m t) | | | Production (m t) | | | Value of shipments ('000 $) |
|---|---|---|---|---|---|---|---|---|
| | | Charcoal | Briquets | Total | Charcoal | Briquets | Total | |
| 8 | 60 | 14 000 | 11 500 | 25 500 | 7 700 | 2 200 | 9 900 | 3 880 |

# 8 The Pulp and Paper Industry

## 8.1 Production Capacity

### Pulp, Paper and Paperboard Mills




### Pulp and Paper Mills *(January 1987)*

| | The MER's Administrative Regions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | Total |
| **Pulp and Paper Mills** | **7** | **6** | **10** | **22** | **4** | **12** | **5** | **4** | **1** | **60** |
| % by region | 11.7 | 10.0 | 16.7 | 18.3 | 6.7 | 20.0 | 8.3 | 6.7 | 1.6 | 100 |
| Using roundwood and chips | 7 | 6 | 5 | 8 | 3 | 1 | 4 | 4 | 1 | 39 |
| Using purchased or recycled pulp, or fibers other than wood | 2 | 3 | 5 | 10 | 2 | 12 | 2 | — | — | 36 |
| **Number of Producers by Product*** | **7** | **7** | **14** | **15** | **6** | **12** | **6** | **4** | **1** | **72** |
| Newsprint and specialty papers | 2 | 4 | 5 | 5 | 1 | — | 2 | 1 | 1 | 21 |
| Fine and special papers | — | — | 2 | — | 12 | 4 | 1 | — | — | 8 |
| Tissue paper | — | — | 1 | 2 | 1 | 3 | 1 | — | — | 8 |
| Commercial pulp | 2 | 2 | 2 | 1 | 1 | — | 2 | 3 | — | 13 |
| Kraft paper and paperboard | 1 | — | — | 2 | 1 | — | — | — | — | 4 |
| Paperboard | 2 | 1 | 1 | 4 | 2 | 3 | — | — | — | 12 |
| Building materials | — | — | 3 | 1 | — | 2 | — | — | — | 6 |

* One plant may manufacture several different products

### Annual Production Capacity, by Product *('000 t)*

| | The MER's Administrative Regions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | Total |
| Newspaper and specialty papers | 390 | 998 | 1 050 | 1 355 | 196 | — | 734 | 166 | 402 | 5 291 |
| Fine and special papers | — | — | 23 | — | 98 | 147 | 98 | — | — | 366 |
| Tissue paper | — | — | 11 | 48 | 13 | 107 | 72 | — | — | 251 |
| Commercial pulp | 23 | 311 | 48 | 163 | 60 | — | 317 | 490 | — | 1 412 |
| Kraft paper and paperboard | 200 | — | — | 344 | 80 | — | — | — | — | 624 |
| Paperboard | 175 | 40 | 30 | 97 | 30 | 149 | — | — | — | 521 |
| **Subtotal** | **788** | **1 349** | **1 162** | **2 007** | **477** | **403** | **1 221** | **656** | **402** | **8 465** |
| % by region | 9.3 | 16.0 | 13.7 | 23.7 | 5.6 | 4.8 | 14.4 | 7.8 | 4.7 | 100 |
| Building materials | — | — | 127 | 13 | — | 53 | — | — | — | 193 |
| **Total Pulp and Paper** | **788** | **1 349** | **1 289** | **2 020** | **477** | **456** | **1 221** | **656** | **402** | **8 658** |

# 8

## 8.2 Production

### Sources of Wood Fiber for the Pulp and Paper Industry *('000 m³)*

| | 1980 | 1983 | 1984 | 1985 | 1986 | 1987(p) | % |
|---|---|---|---|---|---|---|---|
| Pulpwood harvested on public forest lands | 10.4 | 8.6 | 9.8 | 9.6 | 9.2 | 10.2 | 35 |
| Purchased wood | 4.2 | 4.0 | 4.0 | 3.6 | 3.6 | 5.2 | 18 |
| Sawmill residues (chips and others) | 10.1 | 12.4 | 11.9 | 13.5 | 14.6 | 13.7 | 47 |
| **Total** | **24.7** | **25.0** | **25.7** | **26.7** | **27.4** | **29.1** | **100** |
| Total in thousands of cunits* | (8.76) | ( 8.8) | ( 9.1) | (9.43) | (9.48) | (8.51) | |

(p) Predicted figures

* cunits = 100 solid cubic feet = 2.831 cubic meters

### Raw Materials Used in Pulp and Paper Mills

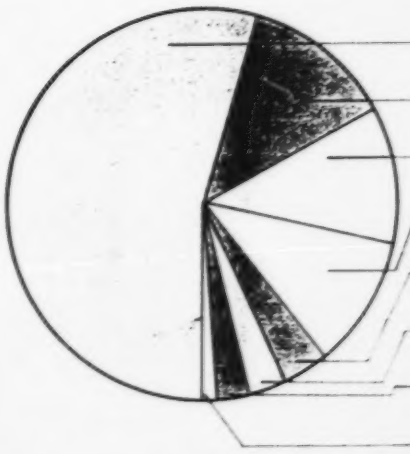
| Year | Roundwood | | Sawmill residues | | Secondary fibers | | Total |
|---|---|---|---|---|---|---|---|
| | '000 t | % | '000 t | % | '000 t | % | '000 t |
| 1984[e] | 5 106 | 54.0 | 4 183 | 41.0 | 220 | 5.0 | 9 509 |
| 1985[e] | 4 880 | 49.4 | 4 545 | 46.0 | 455 | 4.6 | 9 880 |
| 1986[p] | 4 740 | 47.0 | 4 850 | 48.0 | 550 | 5.4 | 10 140 |
| 1987[p] | 5 720 | 53.0 | 4 540 | 42.0 | 540 | 5.0 | 10 800 |

(e) Estimate

(p) Preliminary

Source: MER, Direction du développement industriel

### Distribution of Production, by Product



| Production (%) | | | Products | Production (1000 t) | | |
|---|---|---|---|---|---|---|
| 1984 | 1985 | 1986 | | 1984 | 1985 | 1986 |
| 56.0 | 54.8 | 52.8 | Newsprint | 4 068 | 3 984 | 4 143 |
| 12.9 | 12.3 | 12.3 | Paperboard | 937 | 896 | 962 |
| 9.9 | 11.3 | 12.1 | Special printing papers | 721 | 826 | 953 |
| 10.7 | 10.3 | 11.6 | Pulp shipped outside Quebec | 779 | 748 | 912 |
| 3.5 | 3.7 | 3.6 | Fine papers | 256 | 267 | 286 |
| 3.0 | 3.3 | 3.2 | Sanitary papers | 218 | 240 | 248 |
| 2.6 | 2.7 | 2.7 | Construction papers and paperboards | 186 | 200 | 215 |
| 1.4 | 1.6 | 1.6 | Wrapping papers | 103 | 115 | 126 |
| 100 | 100 | 100 | | 7 268 | 7 276 | 7 845 |

Source: Association des industries forestières du Québec (AIFQ)

# 8

## 8.2 Production (continued)

### Evolution of Production *('000 t)*

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 |
|---|---|---|---|---|---|---|---|
| Newsprint | 4 006 | 4 370 | 3 957 | 4 007 | 4 068 | 3 984 | 4 143 |
| Special printing papers | 309 | 291 | 413 | 487 | 721 | 826 | 953 |
| Fine papers | 220 | 196 | 230 | 265 | 256 | 267 | 286 |
| Sanitary papers | 204 | 194 | 190 | 209 | 218 | 240 | 248 |
| Wrapping papers | 143 | 146 | 128 | 128 | 103 | 115 | 126 |
| Paperboards | 955 | 951 | 748 | 844 | 937 | 896 | 962 |
| Construction papers and paperboards | 171 | 175 | 178 | 200 | 186 | 200 | 215 |
| **TOTAL papers and paperboards** | **6 008** | **6 323** | **5 844** | **6 140** | **6 489** | **6 528** | **6 933** |

Source: Association des industries forestières du Québec (AIFQ)

### Québec's Pulp Production *('000 t)*

| | 1984 | 1985 | 1986[e] | % |
|---|---|---|---|---|
| Mechanical pulp | 3 530 | 3 563 | 3 769 | 53 |
| Sulphite pulp | 1 075 | 1 070 | 1 061 | 15 |
| Sulphate pulp (kraft) | 1 644 | 1 663 | 1 850 | 26 |
| Others | 358 | 350 | 370 | 5 |
| **Total** | **6 607** | **6 646** | **7 050** | **100** |

(e) Estimate

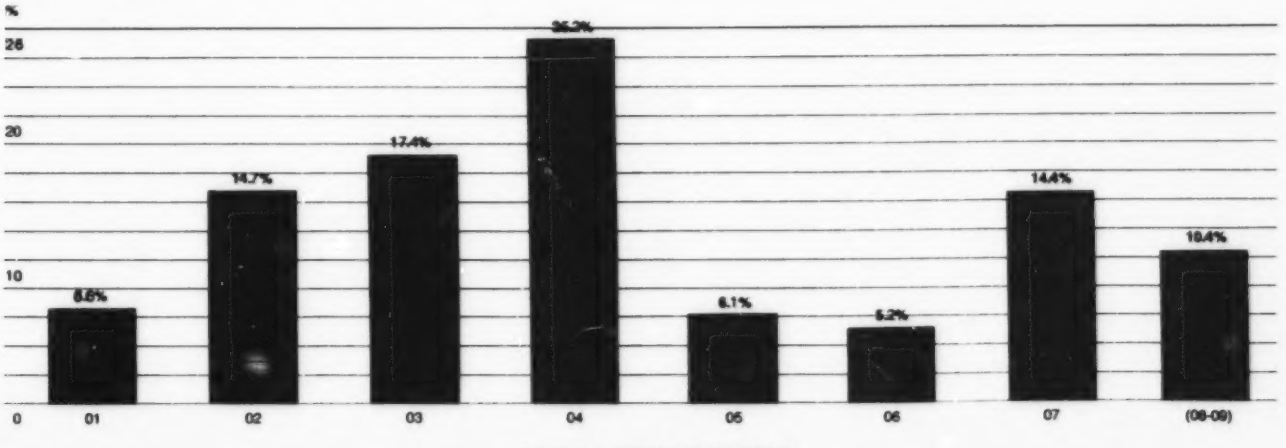
Source: Association des industries forestières du Québec (AIFQ)

### Québec's Share in World Production of Paper and Paperboard

| | Newsprint '000 t | | | | Other papers and paperboards '000 t | | | | Total '000 t | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1982 | 1983 | 1984 | 1985 | 1982 | 1983 | 1984 | 1985 | 1982 | 1983 | 1984 | 1985 |
| Québec | 3 835 | 3 881 | 4 068 | 3 984 | 2 079 | 2 306 | 2 421 | 2 544 | 5 914 | 6 187 | 6 489 | 6 528 |
| Canada | 8 109 | 8 486 | 9 013 | 8 988 | 4 322 | 4 603 | 5 193 | 5 457 | 12 431 | 13 089 | 14 206 | 14 445 |
| World | 25 221 | 25 764 | 27 871 | 28 418 | 141 308 | 151 518 | 161 658 | 164 757 | 166 529 | 177 282 | 189 628 | 193 076 |
| Québec/Canada | 47.3 | 45.7 | 45.1 | 44.3 | 48.1 | 50.1 | 46.6 | 46.6 | 47.6 | 47.3 | 45.7 | 45.2 |
| Québec/World | 15.2 | 15.1 | 14.6 | 14.0 | 1.5 | 1.5 | 1.5 | 1.5 | 3.6 | 3.5 | 3.4 | 3.4 |

Sources: Association des industries forestières du Québec (AIFQ)
Canadian Pulp and Paper Association (CPPA)
Pulp and Paper International, Vol. 28, No. 8, August 1986.

### Pulp and Paper Production, by the MER Administrative Regions in 1984




 Source: Association des industries forestières du Québec (AIFQ)

# 8

## 8.3 Economic Indicators

### Evolution of the Economic Indicators for the Pulp and Paper Industry* *(Group 271)*[1]

| Year | Total number of employees | Total salaries and wages 000 $ | Value of shipments 000 $ | Value added 000 $ |
|---|---|---|---|---|
| 1970 | 31 430 | 268 195 | 1 075 803 | 475 499 |
| 1975 | 31 946 | 404 478 | 1 843 936 | 824 621 |
| 1980 | 31 421 | 686 250 | 3 791 710 | 1 765 768 |
| 1981 | 32 824 | 827 127 | 4 368 958 | 2 016 441 |
| 1982 | 31 404 | 864 478 | 4 176 642 | 1 738 654 |
| 1983 | 30 663 | 925 982 | 4 228 412 | 1 638 529 |
| 1984 | 30 628 | 979 991 | 4 920 649 | 2 105 291 |

(1) The pulp and paper industry represents only part of the industries in Group 27 (paper and allied industries).

Source: Statistics Canada, catalogue 31-203.

### Pulp and Paper Mills Productivity*

| | 1980 | 1981 | 1982 | 1983 | 1984 |
|---|---|---|---|---|---|
| Productivity of the pulp and paper industry (Group 271) | 35.18 | 37.55 | 35.45 | 33.66 | 43.40 |
| Productivity of overall manufacturing industry | 22.82 | 25.60 | 26.46 | 29.18 | 32.56 |
| Relation between sectoral productivity and overall manufacturing productivity | 1.54 | 1.47 | 1.34 | 1.15 | 1.33 |

* Productivity: Value added divided by person-hours paid (in current dollars).

Source: Statistics Canada, catalogue 31-203.

### Modernization Program Grants Paid *('000 000 $)*

| | Quebec | Federal | Total |
|---|---|---|---|
| 1979-1980 | 4.9* | | 4.9 |
| 1980-1981 | 7.1 | 9.1 | 16.2 |
| 1981-1982 | 15.8 | 20.3 | 36.1 |
| 1982-1983 | 10.3 | 13.3 | 23.6 |
| 1983-1984 | 18.1 | 23.3 | 41.4 |
| 1984-1985 | 31.0 | 39.9 | 70.9 |
| 1985-1986 | 13.5 | 17.4 | 30.9 |
| 1986-1987 | 3.4 | 4.3 | 7.7 |
| **Total** | **104.1** | **127.6** | **231.7** |

* Retroactivity.

Source: Bureau de la statistique du Québec (BSQ).

# 8

## 8.3 Economic Indicators (continued)

### Significance of Capital and Repair Expenditures

| | | Capital expenditures ('000 $) | Repairs ('000 $) | TOTAL |
|---|---|---|---|---|
| Total for manufacturing industry (101-399) | 1975 | 1 373 100 | 574 300 | 1 947 400 |
| | 1980 | 2 189 600 | 1 027 300 | 3 216 900 |
| | 1981 | 2 272 400 | 1 104 700 | 3 377 100 |
| | 1982 | 2 159 800 | 1 088 200 | 3 248 000 |
| | 1983 | 2 087 800 | 1 154 900 | 3 242 700 |
| | 1984 | 2 751 000 | 1 264 700 | 4 015 700 |
| | 1985p | 3 281 700 | 1 346 500 | 4 628 200 |
| | 1986e | 3 840 700 | 1 406 900 | 5 247 600 |
| Pulp and paper industry (271) | 1975 | 174 695 | 96 899 | 271 594 |
| | 1980 | 331 443 | 189 986 | 521 429 |
| | 1981 | 453 478 | 227 493 | 680 980 |
| | 1982 | 445 874 | 238 565 | 684 439 |
| | 1983 | 372 302 | 232 783 | 605 085 |
| | 1984 | 424 234 | 255 052 | 679 286 |
| | 1985p | 627 689 | 274 428 | 902 117 |
| | 1986e | 1 085 237 | 315 289 | 1 400 526 |
| Significance of pulp and paper industry in relation to manufacturing industry as a whole | 1975 | 12.7% | 16.9% | 13.9% |
| | 1980 | 15.1% | 18.5% | 16.2% |
| | 1981 | 20.0% | 20.6% | 20.2% |
| | 1982 | 20.6% | 21.9% | 21.1% |
| | 1983 | 17.8% | 20.2% | 18.7% |
| | 1984 | 15.4% | 20.2% | 16.9% |
| | 1985p | 19.1% | 20.4% | 19.5% |
| | 1986e | 28.3% | 22.4% | 26.7% |

(p) Preliminary data (e) Estimated data Source: Investissements prives et publics au Quebec

### Profitability Ratio* *(Pulp and Paper Mills)*

| | Quebec (%) | Ontario (%) | British Columbia (%) | Canada (%) |
|---|---|---|---|---|
| 1980 | 11.1 | 12.4 | 6.6 | 10.6 |
| 1981 | 6.4 | 19.1 | 1.2 | 9.3 |
| 1982 | 2.4 | 8.6 | (10.8) | ( 0.1) |
| 1983 | 1.6 | 2.1 | ( 8.3) | ( 0.5) |
| 1984 | 3.6 | 5.9 | 1.6 | 3.3e |
| **Average** | **4.6** | **10.4** | **( 2.0)** | **4.5** |

* This ratio is calculated by dividing net profits by total revenues
(e) Estimate

### Financial Returns Ratio* *(Sawmills and Planing Mills)*

| | Quebec (%) | Ontario (%) | British Columbia (%) | Canada (%) |
|---|---|---|---|---|
| 1980 | 25.2 | 29.8 | 20.9 | 24.0 |
| 1981 | 19.4 | 25.6 | 10.9 | 19.4 |
| 1982 | 16.4 | 12.7 | 2.0 | 12.5 |
| 1983 | 15.2 | 12.8 | 9.3 | 11.9 |
| 1984 | 18.0 | 15.0 | 13.1 | 13.7e |
| **Average** | **18.4** | **18.3** | **10.5** | **16.1** |

* This ratio is calculated by dividing gross profits by product sales
(e) Estimate

### Working Capital Ratio* *(Sawmills and Planing Mills)*

| | Quebec (%) | Ontario (%) | British Columbia (%) | Canada (%) |
|---|---|---|---|---|
| 1980 | 2.3 | 1.9 | 2.1 | 2.2 |
| 1981 | 2.1 | 1.9 | 1.6 | 1.9 |
| 1982 | 2.0 | 2.0 | 1.1 | 1.7 |
| 1983 | 1.7 | 2.0 | 0.7 | 1.4 |
| 1984 | 1.7 | 2.0 | 1.5 | 1.7e |
| **Average** | **1.9** | **1.9** | **1.3** | **1.7** |

* This ratio is calculated by dividing short-term assets by short-term liabilities.
(e) Estimate

### Financial Structure Ratio* *(Sawmills and Planing Mills)*

| | Quebec Debt: Equity | Ontario Debt: Equity | British Columbia Debt: Equity | Canada Debt: Equity |
|---|---|---|---|---|
| 1980 | 28:72 | 27:73 | 40:60 | 27:73 |
| 1981 | 43:57 | 25:75 | 44:56 | 38:62 |
| 1982 | 40:60 | 31:69 | 49:51 | 43:57 |
| 1983 | 32:68 | 33:67 | 67:33 | 41:59 |
| 1984 | 34:66 | 31:69 | 44:56 | 37:63e |
| **Average** | **37:63** | **29:71** | **47:53** | **38:62** |

* This ratio is the proportion of long-term debts to equity.
(e) Estimate

Note: The financial data contained in the four preceding tables are distributed according to the province in which the industry's head office is located.
Source: Statistics Canada, offprint of catalogue 61-207

# 8

## 8.4 Shipments

### Destination of Québec Pulp and Paper Shipments in 1984

| | Quebec | | Other Provinces | | United States | | Other Countries | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | '000 t | % | '000 t | % | '000 t | % | '000 t | % | '000 t | % |
| Newsprint | 244 | 5.9 | 337 | 8.2 | 3 085 | 75.2 | 438 | 10.7 | 4 104 | 100 |
| Commercial pulp | 314 | 28.7 | 213 | 19.5 | 413 | 37.8 | 153 | 14.0 | 1 093 | 100 |
| Other papers and paperboard | 628 | 26.8 | 877 | 37.5 | 759 | 32.4 | 77 | 3.3 | 2 341 | 100 |
| **Total** | **1 186** | **15.7** | **1 427** | **18.9** | **4 257** | **56.5** | **668** | **8.9** | **7 538*** | **100** |

* Including pulp shipped and reprocessed in Quebec (314 000 mt)

### Destination of Québec Pulp and Paper Shipments in 1985

| | Quebec | | Other Provinces | | United States | | Other Countries | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | '000 t | % | '000 t | % | '000 t | % | '000 t | % | '000 t | % |
| Newsprint | 231 | 5.8 | 320 | 8.0 | 3 062 | 76.8 | 373 | 9.4 | 3 986 | 100 |
| Commercial Pulp | 306 | 29.0 | 210 | 19.9 | 380 | 36.1 | 158 | 15.0 | 1 054 | 100 |
| Other papers and paperboard | 649 | 26.4 | 911 | 37.1 | 822 | 33.4 | 76 | 3.1 | 2 458 | 100 |
| **Total** | **1 186** | **15.8** | **1 441** | **19.2** | **4 264** | **56.9** | **607** | **8.1** | **7 498*** | **100** |

* Including pulp shipped and reprocessed in Quebec (314 000 mt)

Source: Association des industries forestieres du Quebec (AIFQ)

### Significance of Exports

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
|---|---|---|---|---|---|---|
| Pulp and paper exports ('000 000 $) | 2 392 | 2 785 | 2 645 | 2 529 | 3 086 | 3 162 |
| Québec's total exports ('000 000 $) | 14 886 | 15 065 | 14 400 | 14 961 | 17 373 | 18 628 |
| Relative significance of pulp and paper (%) | 16.1 | 18.5 | 18.4 | 16.9 | 17.8 | 17.0 |

Source: Bureau de la statistique du Quebec (BSQ)

### Québec's Share in the U.S. Newsprint Market

| | 1975 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
|---|---|---|---|---|---|---|---|
| Québec shipments ('000 t) | 2 544 | 2 825 | 3 010 | 2 832 | 2 989 | 3 085 | 3 062 |
| U.S. consumption ('000 t) | 8 325 | 10 088 | 10 164 | 10 108 | 10 589 | 11 431 | 11 587 |
| Québec shipments/ U.S. consumption (%) | 30.6 | 28.0 | 29.6 | 28.0 | 28.2 | 27.0 | 26.4 |

Sources: Association des industries forestieres du Quebec (AIFQ)
Canadian Pulp and Paper Association (CPPA)

### World Newsprint Figures

| | 1984 | | | | | 1985 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Production | % | Imports | Exports | Apparent consumption | Production | % | Imports | Exports | Apparent consumption |
| Québec | 4 021 | 14.7 | — | 3 475 | 280 | 3 984 | 14.3 | — | 3 435 | 275 |
| Other provinces | 4 994 | 18.3 | — | 4 490 | 770 | 5 004 | 17.9 | — | 4 523 | 755 |
| United States | 5 030 | 18.4 | 6 800 | 260 | 11 570 | 4 924 | 17.7 | 7 000 | 279 | 11 675 |
| Scandinavia | 3 875 | 14.2 | — | 3 127 | 748 | 3 982 | 14.3 | — | 3 309 | 673 |
| Common Market | 1 837 | 6.7 | 3 257 | 292 | 4 082 | 1 919 | 6.9 | 3 307 | 348 | 4 878 |
| Other Western European countries | 430 | 1.6 | 61 | 147 | 344 | 472 | 1.7 | 81 | 184 | 369 |
| USSR | 1 400 | 5.1 | 7 | 350 | 1 057 | 1 575 | 5.6 | 6 | 370 | 1 211 |
| Other Eastern European countries | 396 | 1.4 | 231 | 52 | 575 | 2 017 | 7.2 | 244 | 435 | 1 826 |
| Latin America | 695 | 2.5 | 621 | 135 | 1 181 | 858 | 3.0 | 553 | 135 | 1 276 |
| Asia, Africa and Oceania | 4 666 | 17.1 | 1 742 | 416 | 5 992 | 4 728 | 17.0 | 1 909 | 394 | 6 243 |
| **World Total** | **27 344** | **100** | **12 719** | **12 744** | **27 319** | **27 888** | **100** | **13 094** | **13 042** | **27 940** |

Source: Association des industries forestieres du Quebec (AIFQ)

# 9 The Forest Sector in Québec's Economy

## 9.1 Economic Indicators

### Economic Indicators for the Forest Sector

| | Total Number of Employees | | | Total Salaries and Wages ('000$) | | | Value of Shipments ('000$) | | | Value Added to Overall Operations ('000$) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1982 | 1983 | 1984 | 1982 | 1983 | 1984 | 1982 | 1983 | 1984 | 1982 | 1983 | 1984 |
| A. Logging | 8 994 | 9 881 | 10 729 | 204 828 | 230 564 | 243 245 | 777 350 | 850 412 | 937 232 | 317 817 | 356 771 | 47 101 |
| B. Wood industry (Group 25) | 23 593 | 27 367 | 28 603 | 393 536 | 493 796 | 551 038 | 1 566 327 | 2 135 840 | 2 474 496 | 641 826 | 886 814 | 1 045 422 |
| C. Paper and related industries (Group 27) | 43 144 | 40 829 | 41 107 | 1 107 687 | 1 156 073 | 1 228 781 | 5 393 093 | 5 433 706 | 6 192 731 | 2 176 011 | 2 080 101 | 2 570 317 |
| D. Total manufacturing activity | 482 337 | 474 820 | 484 883 | 9 915 886 | 10 378 168 | 11 178 303 | 54 293 105 | 56 648 879 | 61 537 263 | 19 520 069 | 21 465 289 | 24 507 163 |
| E. Total economic activity | 2 585 000 | 2 642 000 | 2 722 000 | 50 091 000 | 52 282 000 | 55 706 000 | na | na | na | 84 009 000 | 90 432 000 | 97 631 000 |
| Wood industry / total manufacturing activity (B./D)* | 4.9% | 5.8% | 5.9% | 4.0% | 4.8% | 4.9% | 0.0% | 3.8% | 4.0% | 3.3% | 4.1% | 4.3% |
| Paper and related industries / total manufacturing activity (C/D)* | 8.9% | 8.6% | 8.5% | 11.2% | 11.1% | 11.0% | 9.9% | 9.6% | 10.1% | 11.1% | 9.7% | 10.5% |
| Forest sector / total economic activity (A + B + C)/E)* | 2.9% | 3.0% | 3.0% | 3.4% | 3.6% | 3.6% | na | na | na | 3.7% | 3.7% | 3.8% |
| Manufacturing activity / total economic activity (D/E)* | 18.7% | 18.0% | 17.8% | 19.8% | 19.9% | 20.1% | na | na | na | 23.7% | 23.2% | 25.1% |

* Relation between above-mentioned items

na: not available

Source: Statistics Canada, Catalogue 31-203

### Export of Québec's Forest Products *(1983)*

| | Value of Exports ('000$) | | | |
|---|---|---|---|---|
| | 1982 | 1983 | 1984 | 1985 |
| Roundwood | 8 331 | 16 352 | 16 580 | 16 580 |
| Products of other wood industries | 680 184 | 870 603 | 921 543 | 919 695 |
| Pulp and paper industry | 2 645 066 | 2 529 379 | 3 086 449 | 3 162 478 |
| Products of the paper processing industry | 21 769 | 30 891 | 44 275 | 47 743 |
| Waste paper and wood residues | 17 627 | 14 636 | 21 831 | 26 189 |
| **Total export of Québec's forest products** | **3 372 977** | **3 461 861** | **4 090 678** | **4 172 685** |

Source: Bureau de la statistique du Québec

### Forest Products Exported from Québec's Major Ports 1985-1986 *(mt)*

| Products | Ports | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Montreal (Pv) | | Quebec (Pv) | | Trois-Rivieres (Pv) | | Baie-Comeau (Pv + Fd) | | Matane (Fd) | |
| | 1985 | 1986 | 1985 | 1986 | 1985 | 1986 | 1985 | 1986 | 1985 | 1986 |
| Logs | 24 803 | 37 929 | 4 761 Pr | — | — | — | — | — | — | — |
| Lumber | 101 289 | 108 538 | 53 578 | 1 543 | 98 | 68 | 20 776 | 33 368 | 1 241 | — |
| Chips | — | — | — | — | — | — | 13 317 | — | 3 360 | 17 302 |
| Veneer and plywood | 20 567 | 20 866 | — | — | 1 050 | — | — | — | — | — |
| Other wood products* | 3 992 | 4 343 | — | — | — | — | — | — | — | — |
| Wood pulp | 97 236 | 136 497 | 338 | 2 337 | — | — | — | — | — | — |
| Newsprint | 18 521 | 35 857 | 90 465 | 93 228 | 50 932 | 87 467 | 126 144 | 141 485 | — | — |
| Other paper and paperboard | 30 640 | 51 219 | 1 645 | — | 14 008 | 20 945 | — | — | — | — |
| **Total** | **297 048** | **395 249** | **146 026 (150 787)** | **97 108** | **66 288** | **108 480** | **160 237** | **174 853** | **4 601** | **17 302** |

* Not mentioned elsewhere

Pv: Provincial port

Pr: Private port

Fd: Federal port

Sources: Transport Canada, Port de Montreal, Port de Québec, and Port de Trois-Rivières

# 9 [illegible] in Québec's Economy

## 9.1 Economic Indicators (continued)

### Forest Products Exported from Québec's Major Ports 1985-1986 *(mt) (continued)*

| Products | Ports | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Gros Cacouna (Fd) | | Carleton (Fd) | | Chandler (Fd) | | Pointe-au-Pic (Fd) | | Port-Alfred (Pr) | |
| | 1985 | 1986 | 1985 | 1986 | 1985 | 1986 | 1985 | 1986 | 1985 | 1986 |
| Logs | — | 543 | — | — | — | — | — | — | — | — |
| Lumber | 23 855 | 105 441 | 16 872 | 23 525 | — | — | — | — | — | — |
| Chips | — | — | — | — | — | — | — | — | — | — |
| Veneer and plywood | — | — | — | — | — | — | — | — | — | — |
| Other wood products* | — | — | — | — | — | — | — | — | — | — |
| Wood pulp | — | — | — | — | — | — | — | — | — | — |
| Newsprint | 5 826 | 32 372 | — | — | 53 752 | 43 054 | — | 10 578 | 100 567 | 149 115 |
| Other paper and paperboard | — | — | — | — | — | — | — | — | — | — |
| **Total** | **29 681** | **138 356** | **16 872** | **23 525** | **53 752** | **43 054** | **—** | **10 578** | **100 567** | **149 115** |

* Not mentioned elsewhere

# 9 The Forest Sector In Québec's Economy

## 9.2 The MER's Expenditures in, and Revenues from the Forest Sector

### Gross Expenditures of the MER's Forest Sector *('000 $)*

| Program Aspect[1] | 1980-1981 | 1981-1982 | 1982-1983 | 1983-1984 | 1984-1985 | 1985-1986(e) |
|---|---|---|---|---|---|---|
| **1. Knowledge of the forest** | **5 942** | **6 724** | **7 151** | **7 378** | **7 371** | **8 394** |
| a. Research | 2 600 | 2 813 | 2 826 | 3 032 | 3 124 | 3 175 |
| b. Basic inventory | 3 342 | 3 911 | 4 325 | 4 346 | 4 247 | 5 129 |
| **2. Forest improvement** | **33 145** | **40 074** | **51 500** | **67 581** | **90 397** | **104 844** |
| a. Management of public forests | 19 178 | 24 532 | 31 846 | 46 205 | 69 647 | 79 603 |
| b. Management of private forests | 13 967 | 15 542 | 19 654 | 21 376 | 20 750 | 25 241 |
| **3. Forest protection** | **17 142** | **23 347** | **29 258** | **38 154** | **30 792** | **34 277** |
| a. Fire prevention and control | 10 296 | 13 092 | 13 512 | 18 964 | 10 943 | 10 042 |
| b. Insect prevention and control | 4 360 | 7 421 | 12 958 | 16 969 | 17 510 | 21 883 |
| c. Conservation education | 2 486 | 2 834 | 2 788 | 2 221 | 2 339 | 2 352 |
| **4. Utilization of forests** | **37 259** | **43 063** | **43 157** | **38 303** | **33 000** | **30 025** |
| a. Planning | 8 078 | 8 258 | 11 991 | 9 349 | 8 650 | 9 316 |
| b. Control | 7 970 | 9 127 | 8 974 | 8 965 | 9 217 | 9 315 |
| c. Forest roads | 21 211 | 25 678 | 22 192 | 19 989 | 15 133 | 11 394 |
| **5. Internal management and support[2]** | **10 173** | **12 190** | **12 315** | **13 770** | **14 384** | **23 283** |
| **6. Forestry financing** | **2 368** | **3 520** | **3 499** | **3 224** | **3 417** | **3 703** |
| **7. Development of the forest industry** | **19 310** | **48 001** | **19 101** | **26 539** | **49 118** | **34 982** |
| **Total MER expenditures in the forest sector** | **125 339** | **176 919** | **165 981** | **194 949** | **228 479** | **239 508** |
| **Total expenditures of the economic mission** | **2 018 410** | **2 213 286** | **2 414 176** | **2 728 059** | **2 982 148** | **3 243 703** |
| **Forest sector/economic mission** | **6.2%** | **8.0%** | **6.9%** | **7.1%** | **7.7%** | **7.4%** |

(e) Estimate

(1) Historical data are distributed according to the 1985-1986 budgetary system.

(2) The forest sector's share of the Ministry's total internal management and support expenditures (estimate)

# 9

## 9.2 The MER's Expenditures in, and Revenues from the Forest Sector (continued)

### Revenues of the MER's Forest Sector *('000 $)*

| | 1980-1981 | 1981-1982 | 1982-1983 | 1983-1984 | 1984-1985 | 1985-1986(e) |
|---|---|---|---|---|---|---|
| **Dues on authorized logging operations** | | | | | | |
| • Leased territories | 10 026 | 22 385 | 10 269 | 13 888 | 20 739 | 19 086 |
| • Domanial forests | 10 186 | 12 599 | 11 583 | 12 961 | 18 437 | 18 896 |
| • Other tenures | 2 428 | 1 981 | 429 | 416 | 1 207 | 1 583 |
| **Dues on surplus volumes** | | | | | | |
| • Leased territories | * | 16 | — | 5 | 7 | — |
| • Domanial forests | * | 34 | 13 | 4 | 11 | 33 |
| • Other tenures | * | 106 | – 38 | 32 | — | – 25 |
| **Wood scaler permits** | 5 | 4 | 3 | – 3 | 3 | 3 |
| **Export permits** | 6 | 11 | 10 | — | 5 | 1 |
| **Wood sales** | 187 | 128 | 187 | 279 | 189 | 53 |
| **Rental of air tankers** | 622 | 1 243 | 799 | 2 337 | — | — |
| **Rental of leased territories** | 1 296 | 2 432 | 3 185 | 1 860 | 2 284 | 1 982 |
| **Rental of maple tree groves** | 23 | 30 | 34 | 31 | 29 | 30 |
| **Fire prevention services** | 1 138 | 1 718 | 1 511 | 357 | 3 | 2 |
| **Forest fire extinction** | 491 | 538 | 538 | 104 | — | 2 |
| **Services related to the prevention of, and fight against forest fires** | 486 | 1 117 | 622 | 1 493 | 1 404 | 1 556 |
| **Wood scaling services** | 49 | 49 | 39 | 17 | 26 | 38 |
| **Construction of forest roads** | 162 | – 1 | — | — | 1 | — |
| **Forest inventories and management** | 810 | 1 033 | 907 | 1 260 | 1 231 | 1 216 |
| **Interest on the payment of forest dues** | 753 | 1 399 | 1 302 | 1 573 | 1 531 | 683 |
| **Fines and confiscations** | – 453 | 999 | 236 | 204 | 286 | 419 |
| **Total** | **28 215** | **47 831** | **31 629** | **36 818** | **47 393** | **45 558** |

(e) Estimate

* Included in dues on authorized logging opereations

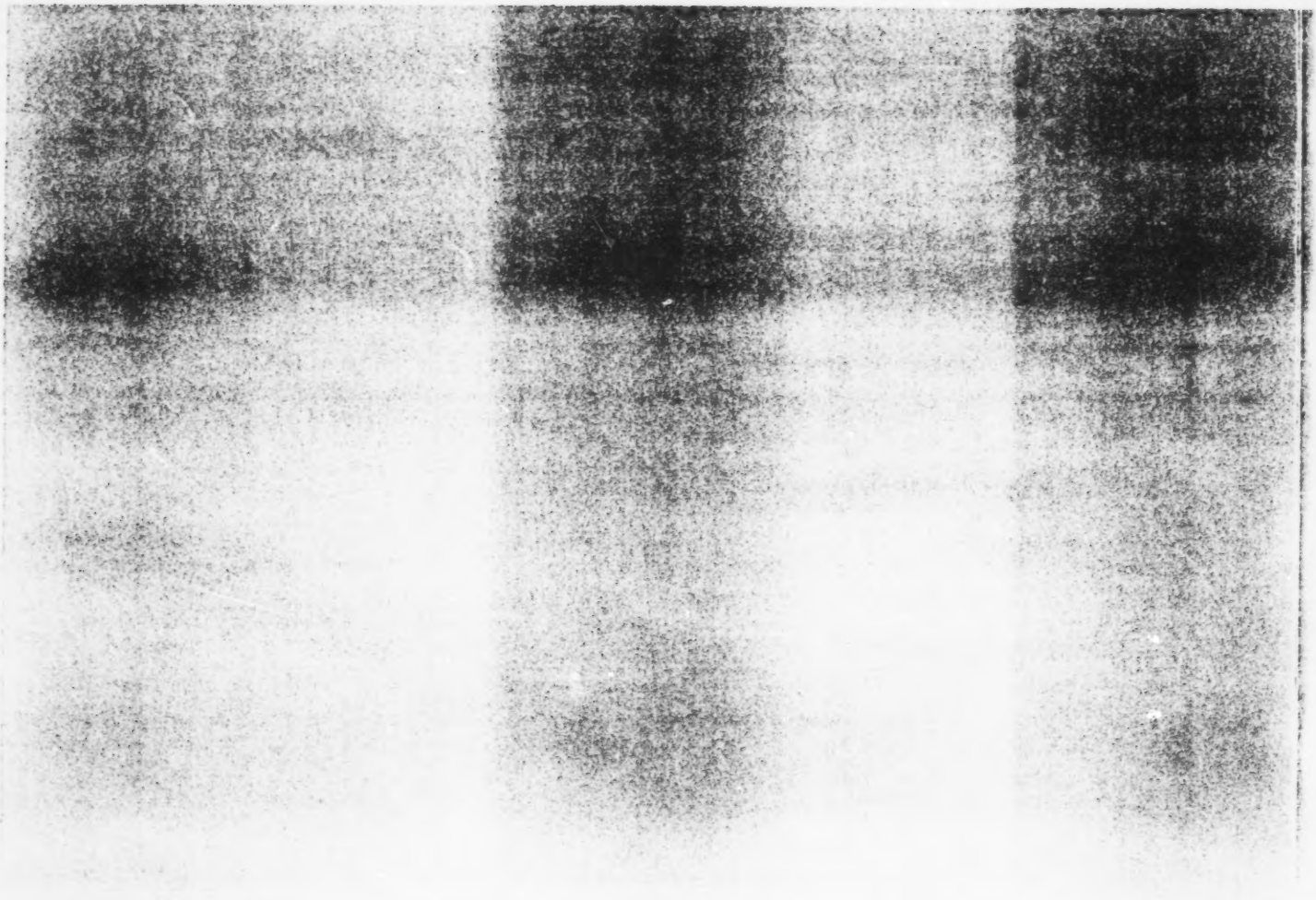
### Conversion Factors

1 cord of wood = 85 solid cubit feet = 2.40 cubic meters
1 cunit = 100 solid cubic feet = 2.831 cubic meters
1 000 board feet measure (bfm) = 2.36 cubic meters (net value)
1 cubic meter = 423.7 bfm = 35.5 cubic feet = 0.353 cunit
1 metric tonne = 1 000 kilograms = 1.102 short ton = 2 205 pounds
1 square kilometer = 0,386 square mile

### Sales Price Index for the Forest Industry

| Year | Softwood Lumber Index (Québec) | Veneer and Plywood Index (Canada) | Paper and Related Products Index (Canada) |
|---|---|---|---|
| 1982 | 96.1 | 91.8 | 103.5 |
| 1983 | 118.5 | 101.5 | 100.1 |
| 1984 | 113.4 | 97.1 | 111.5 |
| 1985 | 117.5 | 100.5 | 112.9 |
| 1986 | 126.9 | 116.4 | 117.5 |

Source: Statistics Canada, catalogue 62-011



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